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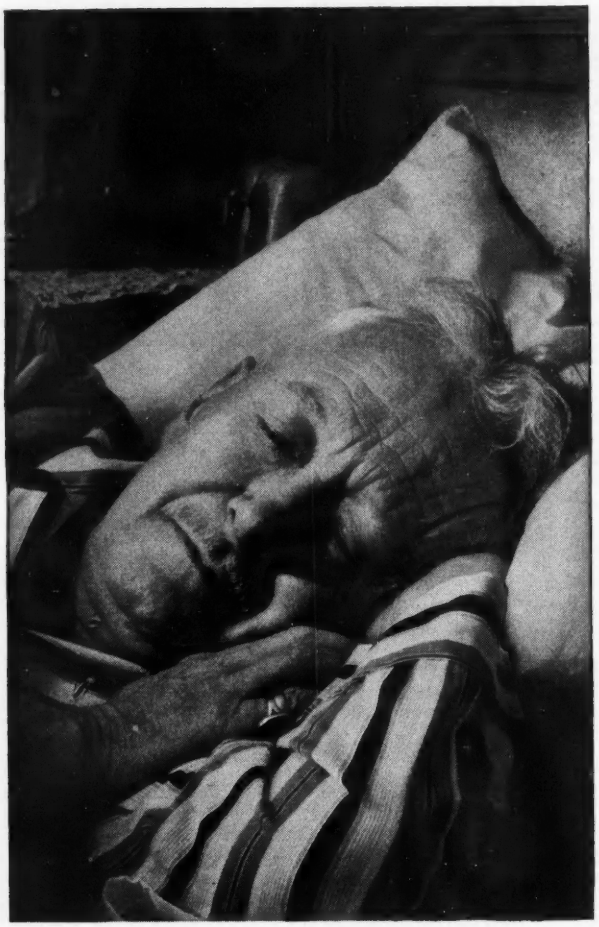

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The Management of Postpartum Hemorrhage

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A PHYSICIAN who is responsible for even one obstetric patient has the threat of a postpartum hemorrhage hanging over him. He may avoid the problem of diabetes in pregnancy by simply referring diabetic pregnant patients elsewhere for care. Similarly, the problem of heart disease in pregnancy can be avoided. But there is no way he can avoid the problem of postpartum hemorrhage, for there is no warning sign by which it can be anticipated. Postpartum hemorrhage remains, therefore, a topic about which all of us must think and for which each of us must be prepared.

The recent interest which has been aroused by the phenomenon of hypofibrinogenemia has served the very important function of redirecting attention to some of the mechanisms which are involved in this dread complication. This same revival of interest, however, and this same body of literature has had the disadvantage of making a statistically uncommon cause of hemorrhage appear to be far more frequent that it actually is. Upon careful review of the literature on hypofibrinogenemia it can be observed that some patients have been reported from more than one institution, and that in many of the case reports there is the *presumption* of a decline in fibrinogen rather than *proof* of fibrinogen depletion. Of this mass of articles one might safely say that seldom has so much medical literature been owed to so few patients based on so small a number of laboratory determinations. While the problem is an important one it is not a frequent one, and it would be well to consider the subject of postpartum hemorrhage with that in mind.

Table 1 indicates the frequency of obstetric hemorrhage at MacDonald House, Cleveland, calculated per 1,000 live births. As MacDonald House is a teaching hospital, there may be an increased frequency of complicated obstetric problems referred to the obstetrical service, but in general this is probably an accurate reflection of the experience of many hospitals. It can be seen from this table that of every 100 women who delivered at term, about 15 had some form of obstetrically-related bleeding. But it can also be seen from this table that even in an institution receiving such desperate referrals, the problem of proven hypofibrinogenemia is far less frequent than is the problem of postpartum hemorrhage stemming from other causes.

Therefore, considering these topics not from the point of view of the amount of attention they have been receiving recently, but from the point of view of the frequency of occurrence in the delivery room, it might be well to start by asking ourselves the question: What makes the postpartum patient stop bleeding? In normal circumstances, why does not a woman become completely exsanguinated in the first few minutes following the delivery of the placenta? In an effort to approach the answers to these questions, some time ago a series of careful measurements of postpartum blood loss was carried out. During the period of the study the various

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TABLE 1.—Causes Obstetric Hemorrhage (Stated in Number of Cases per 1,000 Live Births) Observed on Service of Department of Obstetrics and Gynecology, Western Reserve University School of Medicine

Abortion	95.3
Therapeutic abortion	2.4
Ectopic pregnancy	8.3
Abruptio placenta	
With stillbirth	5.1
Live born	19.6
Placenta praevia	5.3
Low implantation	2.8
Postpartum hemorrhage	13.2
Rupture uterus	0.5
Placenta accreta	0.5
Hypofibrinogenemia	1.2

factors which it was felt might influence the duration and amount of postpartum bleeding were deliberately altered.

Initially the patients were given dicumarol during labor and on into the puerperium, and although the prothrombin level of the treated patients was held considerably below that of the control group, there was no increase in the amount of postpartum bleeding. Similarly, a group of women were given heparin, which increased the clotting time during the immediate puerperium to between 20 and 30 minutes, and again when compared with the control group of patients there was no increased loss of blood from the uterus. During the time that these studies were being carried out, the opportunity arose to deliver a patient who had a platelet count of about 64,000 per at the time of delivery. She had bleeding into the renal pelvis and rather constant hematuria. There was bleeding from the gums and multiple ecchymosis, but there was no increased loss of blood from the interior of the uterus. Similarly, in cases reported in the literature in which delivery was done in the face of thrombocytopenia, one finds a record of hemorrhage from abdominal incisions or into episiotomy wounds, but not the frequent occurrence of postpartum bleeding from within the uterus proper.

In a negative sense, it would appear, therefore, that the answer to the question as to what stops postpartum bleeding does not lie in the prothrombin level of the blood (actually the postpartum patient normally has a prothrombin value of between 110 and 125 per cent) nor in the clotting time of circulating blood, nor in the platelet count. One must look elsewhere than in these fractions of the clotting mechanism to find the normal control of postpartum blood loss.

As these measurements were continued and the increased loss of blood was related to the various possible factors observable in the course of the patient's pregnancy, labor and delivery, a variety of situations were encountered which would increase the loss of blood and even on occasion put it over 500 cc. and into the range of postpartum hemorrhage. The depth of anesthesia and the agent used had such an influence; so also did retained secundines; increasing parity and overdistention of the uterus as with twins had a significant association with increased amounts of postpartum bleeding.

All these factors, of course, simply contribute to diminishing the efficiency of the postpartum uterine contraction. The study served to reemphasize that, for the average patient in normal circumstances, the control of the amount of blood lost from the interior of the uterus is principally based on the efficiency of the uterine contraction. Actually, the open sinuses of the placental bed represent a tremendous defect in the integrity of the patient's vascular system. If a surface area were dissected off the anterior wall of the vena cava, proportionate to the defect that is represented by the open maternal sinuses in the placental bed, the patient would be expected to exsanguinate quite quickly. Yet this same sized defect does exist in each parturient at the time the placenta is delivered, despite which the loss of blood stays within reasonable bounds. In usual circumstances, obviously, this large defect is closed not by the patient's clotting mechanism, but by the ligature effect of the myometrial muscle bundles. The contraction of the myometrium associated with and following the expulsion of the placenta serves to close the maternal sinuses and to prevent excessive blood loss. If this ligature is effective, then administering dicumarol or heparin will not measurably alter the bleeding. Stating this principle not from the point of view of etiology, but from the point of view of therapy, we could say that the contracted uterus does not bleed, and that therapeutic efforts should be initially directed toward getting the uterus effectively contracted. Therefore, a rational approach to the problem of the control of postpartum bleeding would be a review of those factors which commonly can interfere with the effectiveness of the uterine contraction.

Under the heading of the systemic causes of ineffective myometrial contraction, we should note:

A. General anesthesia. Faced with a tetanically contracting uterus and the threat of uterine rupture, a physician would instantly think of ether, because of its known paralyzing effect on the uterus. Yet it is remarkable how often it is forgotten that a bleeding patient who has been under a general anesthesia must be reawakened as rapidly as possible. When the objective is to achieve efficient uterine contraction, the presence of the most effective known uterine relaxer in the patient's system is obviously an enemy.

B. Shock. The patient in surgical shock has an ineffective contraction of the biceps and it is absurd to expect her to have effective contraction of the

uterus. A woman in shock has poor uterine contractility, and poor uterine contractility spells increased uterine bleeding.

C. Anemia and debility. The expression "blood loss breeds the loss of blood" stems from the diminished effectiveness of uterine contraction in this group of patients.

Those causes which are uterine would include the overdistention associated with twins or with a mole; intramural fibroids; and lacerations of the uterus sustained during delivery itself. Those local factors which are intrauterine are represented overwhelmingly by retained secundines and the presence of intrauterine "clots." The word "clot" is placed in quotation marks because, of course, postpartum blood by itself cannot clot. It has no clotting mechanism, and even the addition of calcium or fibrinogen or of thromboplastin will not result in its clotting. This nonclotting blood from the puerperal uterus can, however, be caused to coagulate by seeding it with small amounts of venous blood. The resultant clot is jelly-like, noncontractual, and ineffective in so far as hemostasis is concerned. Indeed such a clot, by holding open the placental bed, can increase the amount of blood a patient loses.

These factors—each of them contributing to an increase in the amount of blood that the postpartum patient loses—are stressed here not because of their newness, nor to deny the importance of the hypofibrinogenemia state, but rather to reemphasize the fact that a successful and efficient contraction of the uterus is one of the essentials in puerperal hemostasis.

It must be pointed out, however, that this uterine contraction never provides an entirely successful ligature. If it did, there would be no postpartum blood from the uterus at all; if it did, the presence of hypofibrinogenemia might not result in uterine hemorrhage.

Hypofibrinogenemia can be caused by three obstetric conditions: (1) The retention of a dead fetus in a missed abortion; (2) amniotic fluid embolus; (3) abruptio placenta. When a depletion of the fibrinogen level takes place in association with any of these conditions, it can lead to massive loss of blood through that portion of the placental bed which is not "ligated" by the uterine contraction.

With respect to the intrauterine retention of a dead fetus, hypofibrinogenemia will not develop if fetal death has taken place before the fourth month of gestation, and does not appear until at least five weeks after fetal death. If the patient fulfills these criteria of having achieved more than four months of pregnancy and of carrying a dead fetus for more than five weeks, fibrinogen determinations should be made at regular intervals. It is well to remember that a depletion of the fibrinogen in the circulating blood does not occur in all such cases. Pritchard and Ratnoff performed such serial fibrinogen determinations on 31 women after fetal death, and in 23 of them found no evidence of a critical depletion of fibrinogen. Any therapeutic interruption of the pregnancy, however, should be done only with accurate knowledge of the fibrinogen level and only when adequate fibrinogen for replacement is present.

As to amniotic fluid embolus, it is well to remember that the patient is in shock. Replacement of the fibrinogen and evacuation of the uterus will not by themselves completely stem the uterine hemorrhage unless the shock is treated simultaneously with oxygen, transfusions and vasopressor drugs.

With respect to abruptio placenta, it should also be noted that not all patients with either partial or complete abruptio have depletion of circulating fibrinogen. Diagnosis in the form of a determination of fibrinogen levels is imperative before treatment can be intelligent or effective.

A method for rapid determination of fibrinogen levels stems from a suggestion made by Page. One centimeter of the patient's venous blood when added to two drops of reconstituted topical thrombin will immediately clot regardless of the fibrinogen level. However, within one or two minutes, in the presence of hypofibrinogenemia, this clot will contract and extrude its red cells; whereas, with adequate levels of fibrinogen this clot will remain intact. This determination gives a sufficiently rapid and sufficiently accurate indication of the fibrinogen levels that it should be carried out promptly on all patients with postpartum uterine bleeding. Fibrinogen therapy should not be carried out unless this test indicates necessity for it, and should be persisted in until the test indicates the reestablishment of normal levels.

With these principles in mind, it would be well to review the steps that should be taken in the management of a patient with postpartum hemorrhage:

A. Exploration of the lower uterine tract. In one of the most dramatic cases of postpartum hemorrhage observed by the author in the past 18 months, the patient was transferred to MacDonald House from a nearby community with presumed hypofibrinogenemia. Upon careful examination, a paracervical laceration in the left fornix was noted. The romance of the possible diagnosis of hypofibrinogenemia had resulted in overlooking a source of bleeding that was cured with two sutures.

B. Exploration of the interior of the uterus. It is imperative to know that the uterus is empty of any large placental portions and that it is not lacerated. If a physician is to be slow and reluctant to put an examining hand into the interior of the uterus, then his patients are not truly benefiting from the age of the sulfonamides and antibiotics.

C. Uterine evacuation. Both by the exploring hand, as well as by curettage—either with a gauze curette of a sponge over the fingers or with a large sized metal curette and placental forceps—the physician must make sure that the uterus is properly evacuated.

D. Holding the uterus. With a hand in the vagina and a hand on the abdominal wall, the uterus can be compressed, temporarily abating the flood of blood. Such compression not only replaces the contractile force of the myometrial muscle bundles temporarily, but also provides manual stimulation to irritate the uterus into its own contraction.

E. Oxygenation of the patient. A patient who has been under general anesthesia must be "flushed out" and awakened as rapidly as possible. A patient who has been under regional block will likewise benefit from the administration of oxygen at this point.

F. The prompt placement of an intravenous needle. Initially infusion of 5 per cent glucose solution can be started and it is well to add 1 cc. of Pitocin (oxytocin injection U.S.P.) to the first bottle of fluid. The presence of a large needle in the vein beforehand (to avoid difficulty in placing it in event of peripheral venous collapse), the administration of the fluid itself and the continuous intravenous administration of Pitocin are all of imperative importance at this moment.

Such a therapeutic approach represents a balanced attack on the problem of postpartum hemorrhage, which is based on the fundamental principles involved and the frequency with which the various entities are encountered. Three additional comments should perhaps be made:

1. What is the place of intrauterine packing in a regimen such as this? Probably, in accordance with these principles, the answer is that it has no place at all. On the one hand, the manual compression of the uterus can provide a greater occlusive force to the placental sinuses than can gauze, and on the other hand the presence of the packing within the uterus works against the fundamental principle, herein advocated, that the empty contracted uterus will not bleed. Probably in those circumstances in which gauze packing is actually placed within the uterine cavity proper instead of in the lower uterine segment, it serves on the one hand only to hold the placental sinuses open, and on the other hand, like the wick in a kerosene lamp, serves as an easy route to conduct the blood to the outside.

2. It is well to bear in mind with regard to oxytocic medications that both the alkaloids of ergot and the extracts of the posterior pituitary are nitrogenous products which, in solution, gradually lose their potency. Thus, ergotrate bears an expiration date, although the fact is overlooked by many hospital purchasing agents. It should be icebox-stored, although most hospital pharmacists store it on the open shelves. It should be transferred to the delivery room in small amounts and the ampules used in sequence, although many floor supervisors persist in ordering an estimated week's supply and letting it languish in the delivery room several days while it loses strength. A certain amount of "policing" of the logistics of the oxytocic medications, getting them from the manufacturer to the patient in short order and good condition will reduce the number of cases of excessive bleeding after delivery.

3. Blood replacement remains imperative. It has been truly said: "The hemorrhaging patient dies from the loss of one red blood cell." The body mechanisms can adjust to progressive hemorrhage up to a certain point. At that point the homeostatic adjustments to hemorrhage are defeated. Unfortunately, the physician does not know which red blood cell may represent the turning point. All of them must be replaced, and replaced promptly, to save a patient with severe bleeding.

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Diagnosis of Rheumatic Fever and Like Conditions

Evaluation of Certain of the Acute Phase Reactants in a Single Specimen of Blood

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• **Certain of the acute phase reactant tests were performed on the same specimen of blood from persons with the following states: Normal, acute respiratory disease, streptococcosis, acute rheumatic fever, acute glomerulonephritis, acute rheumatoid arthritis, inactive rheumatic fever, lupus erythematosus, malignant disease, obesity, asthma, and allergic rhinitis. Of the tests performed, the mucoprotein-tyrosine and the antistreptolysin-0 titer when done together appeared to be the most discriminating. It is suggested that the performance of such tests on the same sample of blood might aid in differentiating mild acute rheumatic fever and acute rheumatoid arthritis from each other and also from other disease states.**

MOST PHYSICIANS are readily able to diagnose acute rheumatic fever when it occurs in typical form. In these situations the criteria for establishing the diagnosis recommended by Jones[4] can be easily applied. It is quite likely, however, that in a significant number of patients the disease is not typically manifest and the criteria of Jones would not be sufficient to establish the diagnosis.

It is the author's opinion that in subtropical climates rheumatic fever infrequently occurs in typical form and is milder in its manifestations.[1] If some of the variations in the manifestations of the disease are represented as a spectrum, it might be stated that there is a shift to the left on the spectrum in the subtropical climates and a shift to the right in the temperate climates. Such a spectrum is illustrated in Chart 1.

It is in those clinical situations where the physician is considering the disease as occurring to the left of the spectrum and where the criteria of Jones are found wanting that special diagnostic aids are most helpful. It is the purpose of this paper to report the results of the performance of a battery of certain of the acute phase reactant tests on the same specimen of blood from patients with various disease states including rheumatic fever. Implications as to the value of such tests in differentiating mild rheumatic fever from other conditions will be discussed.

On each specimen of serum the following determinations were made: Mucoprotein-tyrosine, antistreptolysin-0 titer, C-reactive protein, and nonglucosamine polysaccharides. The methods and techniques used have been reported elsewhere.[3]

RESULTS

Normal Infants and Children

Table 1 summarizes the results obtained on the sera from the 76 normal infants and children. The average values were as follows: Mucoprotein-tyrosine, 3.3 mg. per 100 cc., ±0.5; antistreptolysin-0, 55 Todd units ±55; C-reactive protein, 0; nonglucosamine polysaccharides, 116 mg. per 100 cc. ±14.

Infants and Children with Various Diseases

Blood was obtained from 128 infants and children with the following various disease states: acute rheumatic fever, acute respiratory disease, streptococcosis, acute glomerulonephritis, acute rheumatoid arthritis, inactive rheumatic fever, lupus erythematosus, malignant disease, obesity, asthma and allergic rhinitis. In the cases of rheumatic fever, the diagnosis was based on the clinical findings and was not contingent upon the results obtained from the acute phase reactants. All the patients with acute glomerulonephritis had hypertension, hematuria, albuminuria and cylindruria. A number of the patients with inactive rheumatic fever were the same as those on whom values were obtained during the acute phase of the disease.

Table 2 contains a summary of the results obtained for the various values in the various disease states. From the data it was obvious that the main difference between acute respiratory disease and streptococcosis so far as these tests were concerned was the increased antistreptolysin titer in streptococcosis. In acute rheumatic fever, *all* the acute phase reactants were elevated and usually greatly so. The same was true of acute glomerulonephritis. In acute rheumatoid arthritis all the acute phase reactants are generally elevated except the anti-

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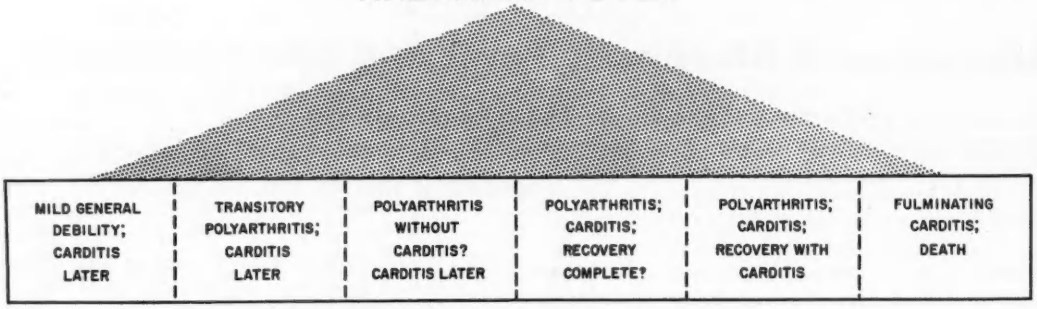

Chart 1.—Spectrum of manifestations of rheumatic fever.

TABLE 1.—*Values for Acute Phase Reactants Found in Apparently Healthy Children*

Determination	Number of Persons	Average	Measurement	Minimum	Maximum
Mucoprotein-tyrosine	76	3.3±0.5	mg. per 100 cc.	1.8	4.3
Antistreptolysin-0 titer	67	55±55	Todd Units	0	333
C-reactive protein	76	0	mm. of precipitation	0	2+
Nonglucosamine polysaccharides	75	116±14	mg. per 100 cc.	85	148

TABLE 2

Diagnosis	Number of Patients	Average Age (Years)	Average MPT	Average ASO	Average CRP	Average NGA
Lupus erythematosus	4	30	6.2	79	0	166
Malignant disease	6	7	7.6	258	4	187
Asthma	12	11	4.6	69	0	141
Allergic rhinitis	15	9	3.9	84	0	119
Obesity	14	13	4.1	86	0	138
Acute respiratory disease of probable nonbacterial origin	29	10	4.5	97	0	131
Streptococcosis	7	12	4.1	507	2	135
Acute rheumatic fever	15	9	7.4	533	3	180
Acute glomerulonephritis	7	8	6.4	314	2	184
Acute rheumatoid arthritis	6	5	9.5	10	4	208
Inactive rheumatic fever	13	10	3.1	98	0	121

Abbreviations: MPT=mucoprotein-tyrosine; ASO=antistreptolysin-0 titer; CRP=C-reactive protein; NGA=nonglucosamine polysaccharides.

streptolysin titer; why this is so is not apparent at present, but certainly this can be helpful in differentiating these two rheumatic diseases for which the prognosis is so different.

In general the acute phase reactant values were normal for the patients with asthma, allergic rhinitis and obesity. In lupus erythematosus the mucoprotein-tyrosine and the nonglucosamine polysaccharides were elevated but the antistreptolysin-0 titer was normal; the serum from only one patient contained C-reactive protein. In malignant disease all the values were regularly elevated except for the antistreptolysin-0 titer.

DISCUSSION

Unfortunately, one of the more commonly used acute phase reactants, the sedimentation rate, was not determined routinely during this study and its use is not reported here. Previous studies,[2,5,6] however, showed that sedimentation rate acceleration parallels quite closely the increased serum mucoproteins except in certain unusual situations, namely cardiac failure, nephrotic syndrome and in patients receiving steroid therapy.

The physiological significance of all the acute phase reactants except the antistreptolysin-0 titer still remains obscure. The antistreptolysin-0 titer, of course, is specific for hemolytic streptococcal infection, as it is a measure of the antibody response to the streptococcal antigen, streptolysin.

The author is aware that determinations on a single specimen of serum may not always be sufficient to establish the proper diagnosis. This is particularly true in differentiating prolonged uncomplicated streptococcal disease from mild rheu-

matic fever. In the former situation, all the acute phase reactants might be slightly to moderately elevated, but the duration of the elevation is the differentiating factor. In streptococcal disease the mucoprotein-tyrosine seldom remains elevated longer than 30 days. In patients with clear-cut evidence of rheumatic fever[6] it was found that the mucoprotein-tyrosine seldom returned to normal sooner than three months after the onset.

From the data presented, it would appear that the C-reactive protein is a substance only remotely related to the mucoprotein-tyrosine and the nonglucosamine polysaccharides. Many patients had elevated values for mucoprotein-tyrosine and nonglucosamine polysaccharides without evidence of C-reactive protein being present, and vice versa. As a result of this observation and certain clinical observations, in the author's experience it would appear that the results of the C-reactive protein determination are less predictable and therefore probably of less value.

The finding of essentially identical results of the acute phase reactants in the sera of patients with acute rheumatic fever and acute glomerulonephritis is not surprising. Epidemiologically, both diseases are thought to be related to infection by the beta hemolytic streptococcus, the main difference being that apparently only certain types of streptococci are nephrogenic whereas all types of streptococci are thought to be rheumatogenic. Too few observations have been made on patients with uncomplicated Sydenham's chorea to be included in this presentation but certainly a study of reactions in that disease should be done.

It was interesting to note that the major difference between the sera from patients with acute rheumatic fever and acute rheumatoid arthritis was the normal antistreptolysin-0 titer in the patients with rheumatoid arthritis. Although both diseases are generally classified as "collagen diseases," this difference suggests etiologic differences.

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Systemic Toxic Reactions to Local Anesthetics

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• **The topical use of anesthetic agents involves an element of risk. Systemic toxic reactions are rare, but they do occur and may result in death. When a reaction occurs from a topical application, it usually progresses rapidly to respiratory and cardiovascular collapse, and thus therapy must be instituted with more haste to avoid deaths. Fatal systemic toxic reactions from topically administered anesthetic drugs are, in effect, usually not due to well informed use of the drug but to misuse owing to less than complete understanding of absorption.**

Emphasis is placed on the causes, prophylaxis and treatment of severe systemic toxic reactions which follow the topical application of local anesthetic drugs. If systemic toxic reactions resulting from a safe dose of a local anesthetic agent are correctly treated, there will usually follow an uneventful recovery rather than a catastrophe.

THE MODERN HISTORY of surface anesthesia probably dates from the introduction of coca leaves in Europe by Scherzer[8] in 1859—he noted the numbness of the tongue resulting from the chewing of the leaves. With the discovery of cocaine by Niemann in 1860 and of its anesthetic properties by Van Anrep in 1878, the way was paved for the first clinical use of this topical anesthetic agent (by Koller in 1884 in ophthalmology).[8] The toxicity of cocaine was soon noted and a search for an effective but nontoxic topical anesthetic agent has continued to date.

At the present time, many years later and after much clinical trial, Pontocaine® (tetracaine, Amethocaine®) and cocaine are the most commonly used topical anesthetic agents for anesthetizing the nose, mouth, pharynx, larynx, trachea and bronchi. Recently Xylocaine® (lidocaine) and Cyclaine® (hexylcaine) have been introduced for this purpose but as yet have not gained the popularity of Pontocaine and cocaine.

Although any one physician will not see many toxic reactions (he should review his technique if he does), and some large series of cases are reported with none, the fact remains that systemic reactions following topical administration of anesthetic drugs do occur.[2,5,6,9,10,14,20,21] Too often the discussion of physicians who use local anesthetic agents in their practice displays a lack of organized thought as to why reactions occur, how they may be prevented and how they should be treated. Therefore, an effort will be made herein to point out: (1) Why severe or fatal systemic toxic reactions to local anesthetic drugs occur more frequently after topical application than after local infiltration or nerve block with these agents; (2) that many of these reactions are due to misuse of the drug and may be prevented by careful prophylactic measures; and (3) how such reactions may be treated successfully.

Pontocaine is the drug to be used as an example in this paper because this drug was employed in most of the recently reported cases in which a fatal or severe systemic toxic reaction followed topical application of local anesthetic agents.[1,3,6,13,20,21] The statements made concerning Pontocaine will apply regardless of the anesthetic agent employed.

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Submitted April 17, 1956.

PHYSIOLOGICAL BASIS FOR SEVERE FATAL TOXIC REACTIONS

Contrary to common belief, a true allergy (sensitivity, idiosyncrasy, hyper-reactivity) to local anesthetic agents, which results in a severe "anaphylactic-like" reaction and death, is extremely rare, and 98 per cent or more of the systemic toxic reactions which occur reflect a high blood level of the local anesthetic drug.[11,12] It must be realized that a reaction can be called allergic with certainty only if the patient reacts to an infinitesimal amount of the drug. But such an amount is seldom involved in the topical application of a drug to a mucous membrane. For example, only 1 cc. of 2 per cent Pontocaine contains 20 mg. of Pontocaine and even this amount cannot be termed infinitesimal.

The severity of a high blood level type of reaction depends necessarily on the rate at which the local anesthetic agent is absorbed as well as on the organ or organs which are the first to be supplied by the drug-laden blood and which, therefore, are the first to be exposed to an excessively high concentration of the drug. The rapidity with which the drug is absorbed is usually determined by the regional block method used (topical application, local infiltration, nerve block), as well as by the blood

supply of the area or organ to be anesthetized. For example, with local infiltration or nerve block of the chest, the abdomen or an extremity, absorption of the drug from the tissues is relatively slow because the tissues *per se* (that is, subcutaneous tissue, muscles, fascial planes), the hyaluronic acid in the subcutaneous tissues and the relatively smaller blood supply of these anatomical structures (as compared to the blood supply of the lung) act as barriers to rapid absorption. Furthermore, it is possible to retard absorption still more by adding epinephrine to the anesthetic solution to be injected into the body tissues. When the local anesthetic agent is absorbed into the blood stream slowly, both its dilution of concentration by the blood and its detoxification by the liver are able to keep pace with absorption of the drug from the tissues. Thus (barring an inadvertent intravascular injection while performing a local infiltration or a nerve block) seldom does an extremely high blood concentration of the drug reach the heart and brain.

On the other hand, topical application of a local anesthetic agent to the mucous membrane of the respiratory tract does not result in slow absorption of the local anesthetic drug and permits very little dilution and detoxification of the drug before it perfuses the heart and brain. Steinhaus'[16] studies of the toxicity of local anesthetic agents in rabbits indicated that the blood level obtained after spraying a local anesthetic agent into the larynx and down the trachea is essentially equivalent to that which would follow the intravenous injection of a similar amount of the drug. This is true because not all the local anesthetic agent remains in the trachea—a substantial part of it is inhaled into the alveoli of the lung. There a single layer of epithelial cells, which forms the lining of the alveoli and separates the alveolar sac from the rich and extensive network of the capillary blood supply of the alveoli, forms practically no barrier to immediate absorption of the drug. This would mean that an extremely high blood level of the local anesthetic drug following such a procedure would reach the heart immediately and, with little dilution or detoxification, be pumped to the brain. In man, the severe toxic reactions which have followed the topical application of local anesthetic agents to the pharynx, larynx and trachea prior to visualization of the respiratory tract, and which have been characterized by sudden fatal respiratory and cardiovascular collapse, would seem to substantiate this observation of Steinhaus.

It is this rapid absorption from the alveoli of the lung that explains why toxic reactions following topical application of local anesthetic drugs to the air passages occur more frequently than when equal or larger amounts of such drugs are used for local infiltration or nerve block.

PROPHYLAXIS OF SEVERE FATAL SYSTEMIC TOXIC REACTIONS

The following precautions will reduce the incidence of severe systemic toxic reactions from the topical application of local anesthetic drugs.

Evaluation of the Patient. The physical status of the patient is a most important factor in estimating the amount of drug that he will tolerate. A patient with a poor physical status (aged, asthmatic, undernourished, exhausted) tolerates less local anesthetic drug than does a patient of good physical status. In a patient whose physical status is substandard, the total amount of the local anesthetic drug (*i.e.*, the total number of milligrams) must be reduced. In no circumstances should a *routine* amount of drug be used in every case. The dosage must be individualized.

Withholding Foods and Liquids. The patient should have nothing by mouth for six to eight hours prior to the anesthetization. Should a systemic toxic reaction occur, this precaution will reduce the likelihood of vomiting. When vomiting occurs, there is always the danger that the patient may aspirate vomitus.

Premedication. Opiates and barbiturates preoperatively will allay the apprehension which may occur prior to the procedure (such as bronchoscopy, for example). During the procedure, they may reduce the patient's complaining of instrumentation or of awkward position. Premedication will also reduce the incidence of psychomotor reactions and reactions to vasoconstrictor agents.

The relief of these discomforts makes the entire procedure more tolerable to the patient but does not eliminate the hazards of a severe systemic toxic reaction. Since the time of Tatum's and coworkers'[18,19] two experiments with animals (1925 and 1926), it has been generally accepted that premedication with barbiturates helps prevent systemic toxic reactions to local anesthetic drugs. However, the authors of the present communication are inclined to believe that barbiturates may do no more than mask early symptoms of a toxic reaction—that the barbiturates may be useful in sedating the patient and reducing the likelihood of apprehension, but that they do not reduce the hazard of a systemic toxic reaction and physicians using them must not feel that by the use of the barbiturates they have eliminated or greatly reduced the likelihood of systemic toxic reactions.

Emergency Equipment and Drugs. It is of the utmost importance that no local anesthetic agent be administered topically unless the following equipment is immediately available: (1) A source of oxygen to which a bag and mask is connected so that a patient in whom the signs and symptoms of a reaction develop may be given oxygen and that

an apneic patient may be given effective artificial respiration with oxygen; (2) oral airways, to establish a patent airway; and, ideally, endotracheal tubes, laryngoscopes and bronchoscopes should also be available; (3) suction for immediate use in the event of emesis by an unconscious patient; (4) intravenous infusion equipment and a bottle of 5 per cent dextrose in distilled water so that a route for administration of drugs intravenously may be established; (5) ampules of vasoconstrictor drugs, such as ephedrine sulfate and Neosynephrine® (phenylephrine) to combat hypotension; and (6) Pentothal® (thiobarbiturate) solution (0.6 per cent to 2.5 per cent) for intravenous injection to control convulsions.

Equally important is the presence of a physician who does not become frantic when a severe systemic reaction results and who is adept at starting an intravenous infusion, establishing a patent airway and manually ventilating the patient with a bag and mask.

Dose of the Local Anesthetic Drug. The least amount of topical anesthetic agent that will supply the required anesthesia should be employed. Often the form (*i.e.*, liquid or crystal) as well as the volume and the concentration in which a local anesthetic drug is packaged is determined by the competitive market price of the drug and a convenient form for use. Drug companies, when packaging a local anesthetic drug for topical use, seldom give consideration to the dosage required by any one patient; the dosage is left to the physician who is to use the drug and, unfortunately, he may have little knowledge of the drug's pharmacologic properties and may not take the time to read the instructions for its use.

The mere fact that a drug comes in a convenient, economical form for use does not warrant its use haphazardly as if it were drinking water. The maximum safe dosage of the drug should not be exceeded. For example, Pontocaine for topical administration is sold only in a 2 per cent solution in a 4 oz. (118 cc.) bottle and most of the fatal systemic toxic reactions that have been reported recently occurred from the use of excessive volumes of this concentration. Usually, the deaths in these instances have been attributed to allergic reaction to the drug. Yet in many of the reports the total amount of the drug employed is not recorded, or only the approximate amount stated. The drug, in many of these cases, was sprayed from an atomizer and the amount put into the reservoir of the atomizer was not measured. The reservoir of the De Vilbiss atomizer (No. 27) holds 20 cc. of solution. It is the opinion of the authors of this article that in the greater majority of these cases a concentration and volume of Pontocaine must have been employed which was excessive for the individual being anesthetized and that the death was a result of an excessively high blood level of the drug from an overdosage, not a result of allergic reaction. It must be borne in mind that a reaction can be termed allergic with certainty only if infinitesimal amounts of the drug were administered.

Certainly 4 to 5 cc. of a 2 per cent Pontocaine solution, *i.e.*, 80 to 100 mg., cannot be considered anything but overdosage when the drug has been used in the respiratory tree, where absorption is so rapid that the subsequent blood level of the drug approximates that of an intravenous injection. Therefore, a physician determining the dosage must think in terms of milligrams of Pontocaine to be used (2 per cent solution contains 20 mg. per centimeter). Literature in the package warns that "for anesthetizing the larynx, trachea or esophagus, the total absorbed dose of Pontocaine should not exceed 20 mg. (0.02 gm.) except in special techniques which have been carefully worked out." Furthermore, it advises using 0.25 per cent or 0.5 per cent solution for anesthetizing the larynx and trachea. Carabelli[2] reported a technique using 8 cc. of 0.25 per cent solution (20 mg.) which produces satisfactory anesthesia for bronchoscopy and bronchography, and Rubin and Kully[14] advocated the use of a technique for these procedures in which 0.5 per cent is employed and 50 mg. of Pontocaine is not exceeded. It can well be reemphasized that if Pontocaine is sprayed into the respiratory tree, probably two-thirds of it, or more, is immediately absorbed by the circulating blood. Hence, if 5 cc. of 2 per cent Pontocaine is used, *i.e.*, 100 mg., then probably upward of 65 mg. is immediately absorbed into the blood and pumped directly to the heart and brain.

The authors' clinical experience in topically anesthetizing the larynx and trachea of 5,000 awake patients prior to endotracheal intubation indicates the 40 mg. of Pontocaine (2 cc. of a 2 per cent solution) may safely be used for this procedure in most patients without provoking any form of systemic toxic reaction, and yet produce satisfactory anesthesia. However, the 2 per cent solution must be diluted to a 0.5 to 0.25 per cent solution and 3 to 4 cc. of the solution may then be used to anesthetize the mouth, pharynx and vocal cords, and an additional 3 cc. may be used to anesthetize the trachea. At no one time should more than 3 cc., even of these weak concentrations, be administered directly into the trachea. If it is necessary to apply an additional 3 cc. to the trachea to effect anesthesia, five minutes must first be allowed to elapse. This waiting period permits detoxification by the liver of that part of the previous tracheal dose which was inhaled into the alveoli and rapidly absorbed into the circulating blood.

Consequently, if Pontocaine were to be packaged so that only a *single* relatively safe dosage were available for application in one bottle, this bottle would contain not more than 8 cc. of a 0.5 per cent solution—a total of 40 mg. of Pontocaine. Cost probably renders such a packaging prohibitive. Therefore, realizing that Pontocaine is a rapidly effective topical anesthetic in a concentration of 0.25 to 0.5 per cent (onset in five minutes), and that for topical application it is available only in a bottle containing 4 oz. (118 cc.) of a 2 per cent concentration, the physician should pour 2 cc. of this solution into a graduate measuring cup and dilute it with at least 6 cc. of normal saline solution. This would result in 8 cc. of a 0.5 per cent solution, 40 mg. being available for use. If a larger volume of solution is needed, then more normal saline solution, not Pontocaine, may be added; 14 cc. of normal saline solution added to 2 cc. of 2 per cent Pontocaine (40 mg.) gives 16 cc. of 0.25 per cent solution. Seldom is it necessary to exceed these amounts or concentrations of Pontocaine to obtain satisfactory anesthesia of the pharynx, larynx, trachea and bronchi.

Use of Vasoconstrictor Drugs. Some physicians add 0.10 to 0.25 cc. of epinephrine 1:1000 to the measured amount of local anesthetic solution to be applied to the mucous membrane. But it is debatable whether this is useful in either retarding absorption of the local anesthetic drug or in prolonging anesthesia. Steinhaus[16] indicated it is not; Kelsall[7] expressed belief it is. Probably it is permissible to employ this amount of epinephrine, since it is easily measured with a small syringe and is not likely to produce an "epinephrine-like" reaction.

SIGNS AND SYMPTOMS OF A SEVERE SYSTEMIC TOXIC REACTION

A systemic toxic reaction to a local anesthetic drug usually starts with the patient complaining of a faint, giddy feeling or the sensation of "blacking-out." His speech becomes incoherent and irrational, and unconsciousness and apnea ensue. Twitching of the fingers may follow, which often rapidly develops into generalized convulsions. Vomiting, with or without aspiration, may occur. Untreated, the patient may convulse two or three more times, get progressively worse and die. Usually, these signs and symptoms following topical application of a local anesthetic agent progress more rapidly than when they result from a regional nerve block procedure.

Muscular twitchings and convulsions, as well as vomiting, are usually attributed to overstimulation of the brain by a high concentration of the local anesthetic agent.[4] Respiratory and cardiovascular collapse are usually attributed to depression of the respiratory and cardiovascular centers in the medulla which follows their overstimulation.[4]

TREATMENT OF A SEVERE SYSTEMIC TOXIC REACTION

Every physician using local anesthetic drugs should have a well thought out and orderly step by step routine of treating toxic reactions to local anesthetic drugs. He must not become frantic and haphazardly inject analeptics, drugs and barbiturates, for that would hasten the death of the patient.

Time is of the essence and therapy must be instituted immediately at the first sign of a reaction; otherwise, circulatory collapse and death follow in a few minutes. No patient should be allowed to undergo even an early symptom of a toxic reaction without treatment, for a few simple measures will usually control the reaction and bring about uneventful recovery. In treating a systemic toxic reaction, the aim is to protect the patient from hypoxia or anoxia, hypotension and cardiac failure until the anesthetic agent is detoxified. When detoxification has occurred, recovery without complications may be expected.

Administer Oxygen Via a Patent Airway. The authors have noted that depressed respiration or apnea usually precedes cardiovascular collapse and death when a systemic toxic reaction occurs. This is singularly true when Pontocaine is the responsible drug. Therefore, at the first sign of a reaction, it has become our custom to give oxygen by bag and mask immediately. The patient's respirations should be assisted if depressed; and if respiration stops, artificial respiration by rhythmical squeezing of the bag must be instituted. An effective exchange, evidenced by expansion of the chest and upper abdomen, at the easy rate of about 24 breaths per minute is usually satisfactory.

An oral airway may be needed to effect a free airway and if a patent airway cannot be maintained in this way, the placement of an endotracheal tube should be considered. If the patient vomits—and this is not an infrequent occurrence if the patient has not had preoperative preparation—the vomitus must be cleared from the pharynx, larynx and trachea before oxygen is given, since giving oxygen under pressure tends to push the vomitus deeper into the bronchi and alveoli. If the patient is unconscious and cannot clear his own airway, it must be done for him by suction and, on occasion, by bronchoscopy.

The authors have successfully treated severe systemic toxic reactions to local anesthetic drugs, including those which have progressed to convulsions, with oxygen therapy and artificial respiration alone.

This seems to indicate that the effective administration of oxygen alone will probably avert circulatory collapse and subsequent death in most cases. The experiments in animals by Tainter and Throndson[17] support this view. They showed that effective oxygen administration, including artificial respiration if apnea occurs, will allow animals to tolerate up to ten times the ordinary minimal lethal dosage of a local anesthetic drug.

It must be borne in mind that during a generalized convulsion manual ventilation is not effective because the larynx and bronchi are in spasm. At such times one should avoid extreme positive pressures on the oxygen bag lest the oxygen be forced down the esophagus and inflate the stomach. As soon as the convulsion subsides, manual respiration will be easy again.

Start Intravenous Fluids and Correct Hypotension. While the physician carries out respiration, an assistant should start an intravenous infusion of 5 per cent dextrose in distilled water. If there is pronounced decrease in blood pressure, a nearly normal blood pressure should be established by the rapid intravenous administration of: (1) 15 to 25 mg. of ephedrine sulfate—this dosage may be repeated at 2 to 5 minute intervals as necessary; or (2) an intravenous drip of Neosynephrine consisting of 1 cc. of a 1 per cent solution of this drug (*i.e.*, 10 mg.) added to 1,000 cc. of 5 per cent glucose in distilled water—this mixture is dripped at the rate of 100 to 180 drops per minute until the blood pressure approaches normal and then it is slowed to a drip that will maintain this blood pressure until the reaction has passed.

Stop Convulsions. If, after one or two general convulsions, it appears that adequate oxygenation of the patient alone does not effectively prevent further convulsions, then and only then, Pentothal (0.6 per cent drip or 2.5 per cent solution) should be given intravenously, sparingly, to control the convulsions. Doses of 50 to 100 mg., which are usually sufficient to reduce the severity of or control the convulsions, will probably suffice. It is seldom necessary to exceed a total dosage of 100 to 300 mg. of Pentothal. Too much Pentothal will add to the respiratory depression which will follow convulsions.

The period of apnea and unconsciousness will depend on the rate of recovery of the vital centers of the medulla, and this in turn depends to a great extent on the rate of detoxification of the local anesthetic drug, as well as on the amount of Pentothal or other depressant drug used. It may be necessary to promote breathing by manual pressure for up to 30 minutes, at which time the patient should return to consciousness and complete recovery.

Do Not Give Analeptics. Analeptics — such as caffeine and Metrazol® (pentamethylenetetrazol) — are contraindicated as they increase the oxygen demand of cells and may accentuate the depression which will follow overstimulation.[15]

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Stress Incontinence in Women

Treatment by Retropubic Urethrovesical Suspension

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• **Twenty-four retropubic urethrovesical suspension operations were performed in a five-year period. Twenty-one of the patients were satisfied with the results, although the objective success of the operation did not always correlate with subjective relief of symptoms. The commonest *apparent* cause for failure was the coincidence of urgency with stress incontinence, and the few *true failures*, due to secondary relaxation of the paraurethral supports, were often mitigated by compensatory learning on the part of the patients, many of whom remain blissfully unaware of the underlying weakness.**

The retropubic urethrovesical suspension operation is simple, effective, and free of complications. It is indicated as a primary procedure whenever a vaginal operation has failed to cure (or, worse, has caused) stress incontinence. It is advised as a complementary procedure for women with a secondary complaint of stress incontinence who must undergo laparotomy for other cause.

IF A WOMAN unconsciously leaks urine while coughing or sneezing she has stress incontinence. This must be carefully distinguished from the uncontrollable desire to void of *urgency* incontinence, and from the constant dribbling of fistulous or *overflow* incontinence. Each variety of incontinence requires a specifically different treatment, and the commonest cause for failure of operative cures is faulty diagnosis.

Stress incontinence is typically a disease of parous, postmenopausal women, but its incidence in this group is unknown. About 5 per cent of nulliparous[16] or recently parous[5] women admit to this embarrassing symptom.

Recent roentgenologic studies demonstrated the relationship between normal micturition and stress incontinence. During micturition, the upper urethra dilates, descends, and rotates posteriorly so that the posterior urethral wall aligns itself with the base of the bladder (Figure 1). Voluntary traction of the pubococcygeus and the striated peri-urethral muscles constrict, elevate and rotate the urethra to its original position, and the flow of urine is cut off (Figure 1). Continence is maintained by the smooth muscle tonus of the urethra and by the equalized pressure within the vesical spheroid. In patients with stress incontinence, the urethra is chronically dilated and posteriorly rotated, so that any sudden rise in intravesical pressure is transmitted to the cone-shaped neck of the bladder and urine is ejected with hydraulic ram-like force through the lower urethra. The critical pathologic changes of stress incontinence are intrinsic to the bladder neck and upper urethra, and are not related to the competence of the pelvic supporting structures. It is not paradoxical, therefore, that some patients with good vaginal support may be incontinent, while others, despite complete prolapse of the uterus and bladder, remain dry.

Cure of stress incontinence requires elevation, anterior rotation, and constriction of the upper urethra. Perineal exercises can do this, and excellent results are obtained by those incontinent patients who, having at least fair musculofascial bladder support, can learn to contract the levator ani muscles. When the pelvic support is poor, plastic vaginal repair and suburethral plication are indicated, and results are good in about 85 per cent of cases. For the incontinent patient with good support who does not respond to perineal exercises, for the remaining 15 per cent of patients in whom vaginal plastic operations have failed, and for incontinent patients in whom laparotomy is indicated for coincident disease, suprapubic urethrovesical suspension is the procedure of choice.

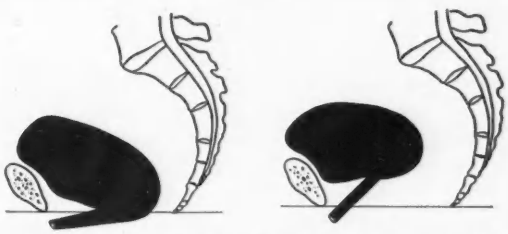

Figure 1.—*Left:* During micturition the upper urethra dilates, descends and rotates posteriorly so that the posterior urethral wall aligns with the base of the bladder; then *(right)*, voluntary traction of the pubococcygeus and the striated periurethral muscles constrict, elevate and rotate the urethra to its original position and the flow of urine is cut off.

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HISTORICAL BACKGROUND

This operation has an interesting history. In cases in which suburethral plication did not cure stress incontinence, Bonney[2] sutured the anterior wall of the bladder to the back of the rectus muscle. Hepburn[8] used the same technique to elevate the prolapsed urethra. Furniss[4] plicated the urethra from above and suspended it by anchoring one of the plicating suture ends to the rectus muscle. In 1942, Williams[23] sutured the side of the bladder and the underlying fascia along the top of the symphysis, and he reported nine such operations in 1947. With the intention of exaggerating the urethrovesical angle for the cure of stress incontinence, Perrin[18] sutured the paraurethral fascia and the bladder neck to the back of the symphysis and to the abdominal fascia. He performed the first operation in March, 1944, and reported two cases in 1945. A similar operation was performed in the United States in June, 1944, and the result of 38 such operations for stress incontinence in women was reported by Marshall, Marchetti and Krantz[13] in 1949. The name Marshall-Marchetti is commonly applied to this operation in the United States, but since the historic origin is complex, since the omission of Krantz's name seems unjustified, and since descriptive terms are generally preferred to autonyms, the author prefers *retropubic urethrovesical suspension* despite its voluble qualities. Table 1 summarizes published experiences with this operation. Mulvany[14] expressed belief that retropubic dissection alone, rather than the suspending sutures, is the curative factor, while Ball[1] reported he got best results by combining vaginal plication with retropubic suspension. Neither of these modifications has as yet been extensively tried.

TABLE 1.—*Published Data by Various Investigators on Results of Retropubic Urethrovesical Suspension*

Author	Year	Cured	Improved	Failed	Total
Perrin[18]	1945	2	....	....	2
Labry[11]	1948	8	3	1	12
Marshall[13]	1949	28	7	3	38
Marchetti[12]	1949	12	....	....	12
Pieghtal[19]	1949	4	....	1	5
Gillam[7]	1952	19	....	1	20
Doolittle[3]	1952	5	....	1	6
Gallaher[6]	1952	10	....	1	11
Ullery[20]	1953	22	1	1	24
Paxon[17]	1953	4	....	....	4
Ward[21]	1953	6	....	....	6
Nelson[15]	1953	34	4	2	40
Käser[10]	1953	12	4	....	16
Jeffcoate[9]	1954	18	....	3	22*
Weinberg[22]	1955	22	4	1	33*

* Includes patients lost to follow-up.

TABLE 2.—*Results in Cases in Which Urethrovesical Suspension Was Done as a Primary Procedure*

Month and Year	Age (Yrs.)	Follow-up (Mos.)	Subjective			Objective	
			Failed	Improved	Cured	Failed	Cured
3-51	67	66	....	X	....	X	....
4-51	41	36	....	X	....	X	....
6-52	75	22	X	....	....	....	X
7-52	61	23	X	....	....	....	X
8-52	69	22	....	....	X	X	....
8-52	65	22	....	....	X	X	....
1-53	57	21	....	....	X	....	X
7-53	74	11	....	....	X	X	....
11-53	42	8	....	....	X	....	X
11-53	35	2	....	....	X	....	X
6-54	41	12	....	....	X	....	....
10-54	67	12	....	....	X	....	X

TABLE 3.—*Results in Cases in Which Urethrovesical Suspension for Incontinence Was Secondary to Another Intraperitoneal Procedure*

Month and Year	Age (Yrs.)	Follow-up (Mos.)	Subjective			Objective	
			Failed	Improved	Cured	Failed	Cured
3-51	45	40	....	X	....	X	....
7-52	42	24	....	....	X	....	X
12-53	64	24	X	....	....	X	....
1-54	51	10	....	....	X	....	....
2-54	50	7	....	....	X	....	X
2-54	50	10	....	X	....	....	X
4-54	43	6	....	....	X	....	X
11-54	47	4	....	....	X	....	X
3-54	43	4	....	....	X	....	X
2-55	47	9	....	X	....	....	X
3-55	44	4	....	....	X	....	X
8-55	65	3	....	....	X	....	X

MATERIAL AND METHODS

In the five-year period 1951-1955, the retropubic suspension operation was performed on 24 women with stress incontinence. Nineteen were clinic patients and five were private patients. In 12 patients whose primary complaint was stress incontinence, only the suspension operation was performed. In 12 other patients undergoing intraperitoneal procedures, urinary incontinence was a secondary complaint. The primary and secondary groups differed in important ways (Tables 2 and 3). The secondary operations were performed because of increasing familiarity with and pleasing results of the primary operations. Besides this, the degree of incontinence was less, the patients were younger, and the operations were more recent in the secondary as compared with the primary group.

Three patients were nulliparous, but had neither spina bifida nor neurologic disease. A fourth had a huge anterior meningocele with both overflow and stress incontinence. Bladder support was normal in all patients, 12 having undergone previous vaginal repairs. Seven patients had been incontinent for ten years or more, and in 15 others the symptoms had lasted more than five years. In ten patients, urgency complicated the stress incontinence, one had infected urine, and in six mild trigonitis was noted on cystoscopic examination.

Urologic consultation and treatment were given to fifteen patients preoperatively. Perineal exercises were tried in only five. Local estrogens were given to five patients and antibiotics to four with no apparent benefit.

A test similar to that advocated by Bonney was performed preoperatively in all patients. With the patient standing, an open curved clamp was held against the anterior wall of the vagina in such a way that the urethra was held against the back of the symphysis without compression. Inhibition of incontinence on cough during this test was a prerequisite to the suspension operation.

Marchetti's[12] operating technique was employed. For the first ten operations chromic catgut was used, but later this was replaced by nonabsorbable material in the hope that the support would be more lasting. After nine successful operations a cotton suture was inadvertently stitched through the bladder wall, causing persistent postoperative cystitis until it was removed. A low transverse abdominal incision is preferred for this operation. Drains are used only for the rare oozing incisions, and retention catheters may be removed within 24 hours. Six patients required a few subsequent catheterizations.

RESULTS

All 24 patients responded to a detailed questionnaire concerning symptomatic improvement. In addition, 16 patients returned for a special postoperative recheck, at which time residual urine was examined for volume and for sediment, the bladder capacity was determined, and with the bladder still full, the patient was tested for incontinence in a standing position on coughing and straining. Subjective responses are compared with objective testing in Table 2. Patients were deemed subjectively improved when, following operations, they could resume normal activities without perineal pad protection, even though occasional stress incontinence might have recurred. No such intermediate results could be distinguished on objective testing, since the patients either leaked or remained dry. The improvement in results of the early as compared with the later operations is more apparent than real. As indications for the operation were broadened, younger patients with less severe, less chronic incontinence were included. The period of followup is shorter and the proportion of secondary cases is greater in the later than in the earlier cases. On the other hand, the later patients were better selected and the operations were perhaps technically superior to the earlier.

No patient was made worse by this operation, a distinction not shared by the vaginal approach. Seven operations were objective failures, yet six of the patients considered themselves symptomatically cured or greatly improved. Bladder neck and urethral support remained good or fair in all but one of the seven patients. Contrariwise, two patients felt the operation was a complete failure, and two were only improved, yet all four were dry on test. In five cases the success amounted to a therapeutic triumph, in that incontinence was a disabling complaint, previous treatment had failed, and after the operation the patient was cured. In five patients the operation neatly supplemented a major intraperitoneal operation, obviating the fatigue and inefficiency of the combined abdominal and vaginal approach and cured an important secondary complaint. Thus, ten of the 24 operations were entirely satisfactory in outcome subjectively and objectively, and 21 of the 24 patients were well satisfied with the result.

DISCUSSION

Considering the unusually difficult problems presented by this small group of patients, the results were remarkably good with this simple, physiological procedure. It is no longer necessary to follow blindly the try-and-try-again approach from below; in fact, more than one such vaginal approach is no longer indicated for stress incontinence. No operations of sling type were performed in the period reported upon, because the few patients who still had stress incontinence following the suspension operation were so improved they considered further operation unnecessary. Three patients were cured of stress incontinence, yet they were dissatisfied with the suspension operation because urgency incontinence remained to spoil the effect. In reviewing the histories in those three cases, the presence of urgency was noted in addition to stress incontinence in each, and, no doubt, had the patient been carefully educated as to the difference, she would have been more appreciative of the partial cure. The suspension operation is by no means contraindicated in patients with stress incontinence who also suffer from urgency. Both should be treated in the most effective manner.

The apparent paradox of the patient who believes herself cured, although stress incontinence remains on test, can best be explained by assuming that she has learned to empty her bladder before its functional capacity is exceeded. In four of the seven patients in whom incontinence recurred, some return of bladder neck relaxation was noted, and the Bonney test corrected the incontinence again.

Exercises have been advised, and although they are of some help, few of the older women are highly enough motivated, or have the persistence, to obtain really curative results with exercises alone. For the partial operative success, exercises are a worthwhile supplement.

The operation is so free of complications it is an excellent addition to other abdominal procedures, and perhaps serious stress incontinence can be entirely prevented in those women who undergo abdominal operations if the surgeon remembers to take a careful history, uses the Bonney test liberally, and spends the additional few moments necessary to suspend the urethra.

Because of the variety of ways of reporting it is difficult to compare the results reported here with those of other clinics. Reports which do not differentiate subjective from objective results cannot give a true picture of the benefits and weaknesses of this operation.

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Poliomyelitis Vaccine

Epidemiologic Observations on the Safety and Effectiveness in California in 1955

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• **During the past year California has participated with other states in a nationwide field evaluation of the safety and effectiveness of poliomyelitis vaccine. Among 227,000 children who received Cutter vaccine, and the household contacts of these children, the incidence of poliomyelitis was higher during the early postvaccinal period than in comparable age groups of the population at large. Among 238,000 children who received poliomyelitis vaccine made by other manufacturers early in 1955 no increase in poliomyelitis was observed in the inoculated children or their household contacts.**

Subsequent observation on over 500,000 additional children vaccinated in California alone since September 1955 with vaccine that was made under revised safety standards has uncovered no evidence of unsafe vaccine. In children who received a single inoculation of vaccine prior to the onset of the poliomyelitis season in 1955 the incidence of paralytic poliomyelitis was about 60 per cent less than in unvaccinated children. Among those who received two inoculations an 85 per cent reduction was observed. The average reduction in paralytic poliomyelitis for the entire vaccinated group was approximately 75 per cent. Data thus far on children vaccinated since September 1955 with poliomyelitis vaccine made by methods now approved indicate that a similar overall effectiveness is still being maintained.

DURING THE PAST YEAR, the California State Department of Public Health has participated in a nationwide study of poliomyelitis under the central coordination of the Poliomyelitis Surveillance Unit of the United States Public Health Service's Communicable Disease Center at Atlanta, Georgia. The major objective of this study has been to make a field evaluation of the safety and effectiveness of poliomyelitis vaccine based upon epidemiologic observations on the occurrence of the disease and with a particular effort to compare the experience of vaccinated and nonvaccinated children. Since a summary of some of the essential findings reported from California and other participating states has been published at the national level,[1,3] the intent of this report is to review in greater detail California's experience with the Salk vaccine during the past year.

Although the observations from California alone are based upon much smaller numbers than the combined national study populations, the validity of the findings is supported by the remarkable similarity they bear to results reported from other states, notably New York and Massachusetts,[3,4] in which comparable studies have been conducted independently.

Through the collaboration of local health officers, private physicians and hospital staff personnel, an intensive effort has been made to obtain a prompt report of every recognized case of poliomyelitis occurring in the state. The initial case report is then confirmed by a more detailed clinical and epidemiologic history which includes the vaccination record of the patient and family. In light of the fact this report was prepared shortly after the close of the 1955 disease year, which ended on March 31, 1956, these data must be considered as provisional. It is improbable, however, that delayed reports or late revisions in diagnostic classification will significantly alter the figures given.

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VACCINE SAFETY

The events leading up to the release of the Salk poliomyelitis vaccine on April 12, 1955, and the period of confusion which ensued in late April and May following the occurrence of cases of poliomyelitis associated with Cutter vaccine, are now generally familiar to most physicians.[6] A detailed report of California's experience during this period is being prepared for publication elsewhere but brief reference to this early experience will serve as background for subsequent observations of vaccine safety.

The occurrence of cases of poliomyelitis with onset 30 days or less after inoculation is summarized in Table 1. Between April 12 and April 27, when the Cutter vaccine was withdrawn, an estimated 227,000 persons, ranging in age from less than one year to over 20 years, received one or more inoculations of this vaccine. The great major-

TABLE 1.—*Cases of Poliomyelitis With Onset 30 Days or Less After Vaccination Compared with Incidence Among Nonvaccinated Children (California, 1955-1956)*

Vaccination Group	Estimated Number of Children	Cases			Rate per 100,000			Children Per Paralytic Case
		Total	Paralytic	Nonparalytic	Total	Paralytic	Nonparalytic	
April 12 to June 15:								
Cutter vaccine, age 5 to 9.....	189,000	19	12	7	10.1	6.3	3.7	15,750
Other vaccines,* age 5 to 9....	225,000	7	5	2	3.1	2.2	0.9	45,000
Nonvaccinated,† age 5 to 9.....	970,000	46	26	20	4.7	2.7	2.1	37,300
September 1 to February 29:								
All vaccines, age 0 to 14.....	547,000	13	7	6	2.4	1.3	1.1	78,100
Nonvaccinated,† age 0 to 14....	2,960,000	111	73	38	3.8	2.5	1.3	40,500

* Other vaccines include Lilly, Parke-Davis and Pitman-Moore.
† Nonvaccinated cases and rates are based upon average 30 day incidence during the period indicated.

ity, approximately 189,000, were children within the 5 to 9 year age group who received inoculations chiefly in school programs sponsored by the National Foundation for Infantile Paralysis. The experience of these children can be compared with the experience of those who received vaccine of other manufacturers and with that of nonvaccinated children of similar age.

By June 15, when first inoculations in the school program were essentially completed, approximately 225,000 children had received one or more inoculations of Lilly or Parke-Davis vaccine—leaving some 970,000 children uninoculated in the 5 to 9 age group in California.

Among the 189,000 children aged 5 to 9, inoculated with Cutter vaccine, there were 19 cases, 12 of which were paralytic, giving an attack rate of 10.1 per 100,000 for all cases and of 6.3 for the paralytic cases. Expressed another way, the incidence was one case of paralytic poliomyelitis for each 15,750 children in this Cutter-vaccinated group. Among the 225,000 children receiving Lilly or Parke-Davis vaccines, there were seven cases, five of them paralytic, giving a paralytic rate of 2.2 per 100,000, or approximately one paralytic case for each 45,000 children inoculated.

For comparison with these two vaccinated groups the average 30-day incidence of poliomyelitis among the nonvaccinated children during these same months is shown in Table 1. The incidence in the nonvaccinated group was fairly stable during this period of the season, averaging 2.7 for paralytic cases or approximately one paralytic case per 37,000 children. It is apparent that the children receiving Cutter vaccine experienced rates for paralytic poliomyelitis approximately two and a half times greater than those of the nonvaccinated group; whereas, the experience of the children inoculated with Lilly and Parke-Davis vaccine was essentially the same as that of the nonvaccinated group. Although the incidence rate for the Cutter-vaccinated children is not exorbitantly high for poliomyelitis in California and might well be exceeded during the peak months of an average poliomyelitis season, this incidence, coming at the low point of the season, is unusual and may be contrasted to the experience during this same period of children who received other vaccines or who were not vaccinated.

From mid-June until early September 1955, very few new inoculations were given and there was, therefore, little opportunity to make additional observations on the safety of the vaccine in California. No new commercial supply of vaccine was released in the state until early September. The few inoculations given during the summer were limited almost entirely to additional second inoculations for children in the school program.

Although all the vaccine distributed in California since September has been released under revised safety testing standards issued May 26, 1955, a continuing system of alert has been maintained to observe vaccine safety. A record of all vaccinated persons by vaccine manufacturer and lot number is maintained by the State Department of Public Health and the information in each case is forwarded immediately to the National Surveillance Unit to be checked against the experience from other states in which the same vaccine is used.

The occurrence of cases with onset 30 days or less after inoculation, among an estimated 547,000 children 0 to 14 years of age who have received only vaccine released since last September, is also shown in Table 1. This estimate of vaccinated children is based upon actual reports of first inoculations made by local health officers and by other physicians. No correction has been made for deficient reporting of inoculations by physicians using the so-called commercial vaccine.* This estimate is quite conservative and therefore tends to magnify the incidence rates in this group. Among these children there have been 13 cases, seven paralytic and six nonparalytic, giving a paralytic rate of 1.3 per 100,000 or one paralytic case for each 78,000 inoculated children.

* Available through regular trade channels rather than from supplies allotted through public health organizations.

TABLE 2.—*Cases of Poliomyelitis With Onset 30 Days or Less After Inoculation Among Children Vaccinated Since September 1, 1955 (California, September 1, 1955 to February 29, 1956)*

Month	Estimated Population 0 to 14 Year Age Group		Total Cases		Rate per 100,000		Children per Case	
	Vaccinated	Non-Vaccinated	Vaccinated	Non-vaccinated	Vaccinated	Non-vaccinated	Vaccinated	Non-vaccinated
September	11,000	3,156,000	1	182	9.0	5.8	11,000	17,341
October	28,100	3,128,000	2	147	7.1	4.7	14,050	21,279
November	50,000	3,078,000	2	116	4.0	3.8	25,000	26,534
December	63,500	3,014,000	2	96	3.1	3.2	31,750	31,396
January	211,600	2,792,000	3	72	1.4	2.6	70,533	38,778
February	182,800	2,609,000	3	57	1.6	2.2	60,933	45,772

TABLE 3.—*Interval from Inoculation to Onset of Illness—Cases of Poliomyelitis With Onset 30 Days or Less After Vaccination (California, 1955-1956)*

Interval in Days	Vaccinated Prior to June 15, 1955				Vaccinated After September 1, 1955	
	Cutter (227,000 Children)		Parke-Davis, Lilly or Pitman-Moore (238,000 Children)		All Vaccines (547,000 Children)	
	Total	Paralytic	Total	Paralytic	Total	Paralytic
Total 0 to 30	35	27	7	5	13	7
0 to 1	2	....	....	....	2	....
2 to 3	1	....	2	2	....	....
4 to 5	7	7	1	....	3	3
6 to 7	11	10	....	....	....	....
8 to 9	8	7	....	....	1	....
10 to 11	2	2	1	1	2	1
12 to 13	2	1	....	....	2	1
14 to 17	1	....	....	....	....	....
18 to 21	1	....	1	1	2	1
22 to 25	....	....	2	1	....	....
26 to 30	....	....	....	....	1	1

To compare with this inoculated group, the average 30-day incidence of poliomyelitis among the nonvaccinated children 0 to 14 years of age during the same period is also shown in Table 1. This group of nearly three million children had a paralytic rate of 2.5 per 100,000 or one paralytic case for each 40,500 children in the group.

It is apparent that, in any endemic area in which inoculations are given, some cases may be expected to occur coincidentally among recently vaccinated children. Until sufficient time has elapsed for the vaccine to exert some protective effect, it is reasonable to expect about the same incidence of poliomyelitis among the newly vaccinated as in nonvaccinated individuals of similar age.

For a more precise comparison of the vaccinated and nonvaccinated children since last September, a month-by-month breakdown of the cases in each group is shown in Table 2. If the vaccine were giving rise to cases of poliomyelitis, then the number of cases occurring shortly after vaccination should increase each month in proportion to the increasing number of inoculations. It may be seen, however, that as the number of inoculations increased from the 11,000 reported in September to about 200,000 per month in January and February, there was not a proportionate increase in cases among these recently vaccinated children.

A single case occurring among the 11,000 children vaccinated in September and two cases occurring in the group vaccinated in October gave slightly higher rates for the vaccinated children for these two months. As the size of the vaccinated population increased and the rates became statistically more meaningful, there was a continuous decline in the incidence rate among the vaccinated which closely paralleled the decline in rate among the nonvaccinated. This same trend was also shown by the ratio of well children per observed case in each group — vaccinated and nonvaccinated. During January and February only one case of poliomyelitis was observed within 30 days of first injection for each 60,000 to 70,000 inoculated children, while cases among the nonvaccinated in this same age group were occurring at the rate of approximately one case per 40,000 children. In summary, other than the experience with Cutter vaccine, no evidence has been detected in California that the number of cases occurring among recently vaccinated children is in excess of the number expected to occur by chance alone.

Another useful index of vaccine safety is provided by observation of the interval from inoculation to onset of illness among vaccinated persons. In Table 3, this interval is shown for cases occurring up to 30 days after inoculation among three groups of vaccinated children in California. Among 227,000 persons, including a few adults, who re-

ceived Cutter vaccine, 35 cases occurred within the 30-day postvaccinal period. There was fairly concentrated clustering of these cases: they began 4 to 5 days after inoculation and reached a peak at 6 to 7 days, with no cases at all after the 21st day. This clustering was most prominent for the paralytic cases, all of which had onset within a period of 4 to 14 days after inoculation. Of some 238,000 children who received Parke-Davis, Lilly, or Pitman-Moore vaccine, there were seven cases, of which five were paralytic. Only one of the paralytic cases fell within the 4 to 14-day interval. Similarly, the intervals of the 13 cases among 547,000 children inoculated only with vaccine released since last September showed no evident grouping within the 30-day period.

Another index for observing vaccine safety is provided by observations on correlation of site of first paralysis with the site of inoculation among cases occurring shortly after vaccination. Data on this point are summarized briefly in Table 4. The same groups of vaccinated children as in the previous table are again shown. Among the Cutter-vaccinated group there were 27 paralytic cases, in 23 of which the first paralysis was in the inoculated extremity. Among children receiving other vaccines early last year, there were five paralytic cases—in one of which the first paralysis was in the inoculated extremity. In none of the paralytic cases observed among children first inoculated since last September did the first paralysis occur in the inoculated extremity.

Finally, in considering vaccine safety, careful study had been made during the past year of the occurrence of poliomyelitis among persons who were not themselves vaccinated but who were known to have had close contact with a vaccinated child. Experience with Cutter vaccine clearly demonstrated that, if a vaccine contains infectious amounts of live virus, some of the inoculated persons will develop a "full-blown" case of paralytic poliomyelitis. Others, apparently having some degree of previous immunity, will have no recognizable clinical illness but will have a "silent infection" which serves to spread the virus to their associates, in some of whom a clinical case of poliomyelitis may develop.

Although by laboratory tests all vaccine released since last May has been free of any demonstrable infectious virus, some observers have expressed concern that the vaccine might still contain minute quantities of undetected live virus which might give rise to unrecognized infections and thereby create an added risk of infection to the persons in close contact with vaccinated children.

In an ultimate sense, investigation of this hypothesis would require extensive and carefully controlled laboratory studies comparing the virus excretion pattern of vaccinated and nonvaccinated persons. In a practical sense, however, if persons in known close association with recently vaccinated children have no greater incidence of poliomyelitis than the population at large, it may reasonably be concluded that vaccination of a child does not create an added risk of infection to the other members of the family.

Table 5 outlines the occurrence of poliomyelitis in California among household contacts of a vaccinated child within a period of six weeks following the inoculation. Based on information about the household composition obtained in each of these cases, it was estimated that on the average there

TABLE 4.—*Correlation Between Site of Inoculation and Site of First Paralysis in Cases of Poliomyelitis With Onset 30 Days or Less After Inoculation (California, 1955-1956)*

Vaccination Group	Estimated Number of Children	First Paralysis in Inoculated Extremity: Paralytic Cases	
April 12 to June 15:			
Cutter vaccine	227,000	27	23
Other vaccines	238,000	5	1
Sept. 1 to Feb. 29:			
All vaccines	547,000	7	....

TABLE 5.—*Cases of Poliomyelitis in Household Contacts of Vaccinated Children* (California, April 12 to June 15, and September 1 to December 31, 1955)*

Inoculation Group	Number of Vaccinated Children	Estimated Household Contacts Age 0 to 40	Cases Age 0 to 40: Total	Cases Age 0 to 40: Paralytic	Rate per 100,000: Total	Rate per 100,000: Paralytic	Number of persons per case: Total	Number of persons per case: Paralytic
April 12 to June 15:								
Cutter	227,000	530,000	41	34	7.7	6.4	12,900	15,600
Other vaccines	238,000	550,000	15	10	2.7	1.8	36,700	55,000
Total population,† age 0 to 40	.....	8,100,000	248	126	3.1	1.6	32,700	64,300
September 1 to December 31:								
All vaccines (first inoculation)	152,600	360,000	11	9	3.1	2.5	32,700	40,000
All vaccines (first or second inoculation)	312,000	740,000	30	19	4.1	2.6	24,700	38,900
Total population,† age 0 to 40	.....	8,100,000	275	169	3.4	2.1	29,500	47,900

* Includes cases with onset less than six weeks after inoculation of a household member.
† Cases and rates for total population, age 0 to 40, are based on an average six weeks incidence during the period indicated.

TABLE 6.—*Comparative Incidence of Poliomyelitis in Vaccinated and Nonvaccinated Children Age 5 to 9 Years (California, June 15, 1955 to October 31, 1955)*

Vaccination Status	Estimated Number of Children	Cases			Rate per 100,000			Per Cent Estimate of Effectiveness	
		Total	Paralytic	Nonparalytic	Total	Paralytic	Nonparalytic	Total	Paralytic
Nonvaccinated	886,000	210	113	97	23.7	12.8	10.9	....	....
Vaccinated	414,000	61	13	48	14.7	3.1	11.6	38	76

Note: All first inoculations were completed by June 15. Three cases (one paralytic) with onset less than 30 days after first inoculation are excluded.

were approximately two and a half nonvaccinated household contacts for each vaccinated child, taking into account the fact that in many households several children are vaccinated. While these estimates are not precise, they provide a reasonable basis for comparison of the experience of various vaccinated groups. For the group who received Cutter vaccine, there were an estimated 530,000 household contacts under 40 years of age. Among these contacts there were 41 cases of poliomyelitis, giving a paralytic incidence of 6.4 per 100,000 or approximately one paralytic case for each 15,000 household contacts. For the children who received other vaccines before June 15 last year, there were an estimated 550,000 household contacts under age 40 in whom there were 15 cases with a paralytic incidence rate of 1.8 per 100,000, or approximately one paralytic case per 55,000 household contacts. For comparison, the incidence of poliomyelitis for the total population of California under 40 years of age over an average six-week period comparable to the exposure period of the household contacts described above, is also shown in Table 5. In this population of some eight million persons there was an average six-week incidence rate of 1.6 for paralytic cases, or approximately one paralytic case for each 64,000 persons.

Even allowing for considerable error in the estimated number of contacts, these data provide strong evidence that the household contacts of Cutter vaccinated children had an incidence of paralytic poliomyelitis significantly higher than the population at large, whereas in the household contacts of children who received other vaccines early in 1955 there was no demonstrable increase in poliomyelitis.

A similar comparison was made of incidence among household contacts of children inoculated with vaccine released since last September (Table 5). By the end of December 1955, there were approximately 152,600 children in this group in California. Among the household contacts of these children there were 11 cases with a paralytic rate of 2.5, or approximately one paralytic case for each 40,000 household contacts. If to this group of children, who received only vaccine released after September, are added children who had received one inoculation earlier in the season but who had later inoculations with vaccine released in the fall, there were approximately 312,000 children who by the end of December had had at least one inoculation of the newer vaccine. Among the estimated 740,000 household contacts of these children there was a paralytic incidence rate of 2.6 per 100,000, or approximately one paralytic case for each 39,000 inoculated children during the six-week postvaccinal period. In the population as a whole, under age 40, the average incidence of paralytic poliomyelitis was 2.1 per 100,000 or approximately one paralytic case for each 48,000 persons during a comparable six-week period. On the basis of these rather crude estimates the poliomyelitis experience of all of these last three population groups has been essentially similar, since last September. The fact that an increased incidence of poliomyelitis was readily demonstrated among the contacts of children who received Cutter vaccine gives added confidence that any significant risk would be detected for the contacts of other vaccinated children if risk existed.

Thus, in reviewing the data on vaccine safety as a whole, there has been no evidence in California, aside from the unique experience with Cutter vaccine, to suggest that inoculations with Salk vaccine have been attended by any demonstrable risk of causing poliomyelitis either in persons vaccinated or in their associates. These epidemiologic observations support the assurance of safety given by the Public Health Service's Technical Committee on Poliomyelitis Vaccine.[5]

VACCINE EFFECTIVENESS

Although it was not possible to conduct a controlled study of vaccine effectiveness during 1955 as was done during the field trials of 1954,[2] conditions were reasonably satisfactory in California for observing and comparing the experience of vaccinated and nonvaccinated groups of children. Since few new vaccinations were given in the state between June 15 and late September, the vaccinated population remained fairly stable during the period of peak incidence. Table 6 summarizes the over-all experience of the estimated 414,000 children within the 5 to 9 age group who had received at least one

TABLE 7.—*Comparative Effectiveness of One and Two Inoculations of Poliomyelitis Vaccine in Children Age 5 to 9 Years (California, June 15, 1955 to October 31, 1955)*

Vaccination Status	Estimated Number of Children	Cases			Rate per 100,000			Per Cent Estimate of Effectiveness	
		Total	Paralytic	Nonparalytic	Total	Paralytic	Nonparalytic	Total	Paralytic
Nonvaccinated	886,000	210	113	97	23.7	12.8	10.9	....	....
One inoculation, total	187,000	36	10	26	19.3	5.3	13.9	19	59
Cutter	64,000	11	3	8	17.2	4.7	12.5	27	63
Parke-Davis or Lilly	123,000	25	7	18	20.3	5.7	14.6	14	55
Two inoculations, total	195,000	25*	3	22	12.8	1.5	11.3	46	88
Cutter-Parke-Davis	103,000	13	1	12	12.6	1.0	11.6	47	92
Parke-Davis or Lilly	92,000	12	2	10	13.0	2.2	10.9	45	83

* Includes four nonparalytic cases with onset less than 14 days after second inoculation.

TABLE 8.—*Effectiveness of Poliomyelitis Vaccine in California—Cases With Onset 30 Days or More After First Inoculation, Age Group 0 to 14 Years (September 1, 1955 to February 29, 1956)*

Month	Rate per 100,000 Nonvaccinated Age 0 to 14		Vaccinations Since September 1					Vaccinations Prior to September 1				
	Total	Paralytic	Vaccinated Over 30 Days	Expected Cases		Observed Cases		Vaccinated Over 30 Days	Expected Cases		Observed Cases	
				Total	Paralytic	Total	Paralytic		Total	Paralytic	Total	Paralytic
Total	.....	.....	.....	17	11	7	3	.....	104	68	42	11
September	5.8	3.2	.....	....	....	....	....	465,000	27	15	19	4
October	4.7	3.2	11,000	....	....	....	....	465,000	22	15	7	....
November	3.8	3.0	39,100	2	1	....	....	465,000	18	14	6	4
December	3.2	1.9	89,100	3	2	4	2	465,000	15	9	2	1
January	2.6	2.0	152,600	4	3	1	....	465,000	12	9	4	1
February	2.2	1.4	364,200	8	5	2	1	465,000	10	6	4	1
			Per cent estimated effectiveness			59	73	Per cent estimated effectiveness			60	84

Note: Estimated effectiveness $= \left(1 - \frac{O}{E}\right) 100$

(Effectiveness is the difference between the expected rate—that is the rate in uninoculated children—and the actual rate, expressed in per cent. Thus, if there were 60 cases in a group of persons who did not receive the vaccine and 30 cases in a similar group who were inoculated, the effectiveness would be stated as 50 per cent.)

inoculation of vaccine before June 15. This comparison is based on cases having onset more than 30 days after the first inoculation to allow a reasonable time for antibody development, and the elimination of cases that were in the early incubatory stages at the time of inoculation. Only one paralytic case was excluded on this basis. Between June 15 and the end of October, among the 886,000 nonvaccinated children, there were 210 cases of poliomyelitis, 103 of them paralytic, giving a total incidence rate of 23.7 and a paralytic rate of 12.8 per 100,000. Among the vaccinated children during the same period there were 61 cases, of which 13 were paralytic, a paralytic incidence rate of 3.1 per 100,000. Expressed as percentage effectiveness, this observed difference in rates represents a 76 per cent reduction in paralytic cases in the vaccinated group. If total incidence is considered, without regard to the paralytic status, there was a reduction of 38 per cent in the number of cases expected in the vaccinated group. Thus, although there appears to have been a significant reduction in the total number of expected cases, the reduction in paralytic illness was the more striking.

In Table 7 data on these same children are shown in further detail to compare the effectiveness of a single inoculation with that of two inoculations. Among 187,000 children who received a first inoculation before June 15 and went through the summer without receiving further inoculations, there were ten paralytic cases, giving a paralytic incidence rate of 5.3 per 100,000. Compared with the rate of 12.8 in nonvaccinated children, this is a reduction of 59 per cent in the expected number of paralytic cases. Among the 195,000 children who received two inoculations, there were only three paralytic cases, giving a rate of 1.5 per 100,000 or a reduction of 88 per cent in the number of expected paralytic cases.

A question naturally arises as to how much influence the Cutter vaccine had in producing this level of effectiveness. Therefore, the Cutter-vaccinated group may be compared with the combined experience of those who received Parke-Davis or Lilly vaccine (Table 7). Among 64,000 children who received a single inoculation of Cutter vaccine, there were three paralytic cases, giving a paralytic rate of 4.7 per 100,000, which, compared with the nonvaccinated group, gave an estimated effectiveness of 63 per cent against paralytic poliomyelitis. The 123,000 children who received a single inoculation of either Parke-Davis or Lilly vaccine ex-

perienced a paralytic rate of 5.7, a reduction of approximately 55 per cent from expected paralytic incidence.

In the group of children who received two inoculations, there were approximately 103,000 who received a first inoculation of Cutter vaccine and second inoculations with other vaccine, usually Parke-Davis. Among this group there was a single paralytic case, giving a rate of one per 100,000 or an estimated effectiveness of 92 per cent against paralytic poliomyelitis. Among the group of approximately 92,000 children who received two inoculations of either Parke-Davis or Lilly vaccine there were two paralytic cases, giving a rate of 2.2 per 100,000 or an estimated effectiveness of 83 per cent.

Because of the small numbers of cases involved, these differences are not significant by the usual statistical standards and no firm conclusions can be drawn on the relative effectiveness of Cutter vaccine as compared with Lilly and Parke-Davis vaccine. There is a suggestion that the Cutter vaccine was somewhat more effective, but the differences are so small that the over-all estimate of effectiveness would be changed very little if the Cutter-vaccinated group were excluded and judgment was based entirely on the experience with other vaccines.

Thus, in summary, in the children vaccinated early in the season last year there was approximately 60 per cent less paralytic poliomyelitis following one inoculation and 85 per cent less following two inoculations than there was among children of similar age who were not inoculated. This is remarkably similar to observations in the Massachusetts epidemic last summer in which the paralytic poliomyelitis rate in 138,000 children who had a single inoculation was approximately 60 per cent[4] less than the rate in children who were not inoculated.

A question frequently asked since the introduction of new safety testing standards is: Have these new procedures to assure the safety of the vaccine seriously impaired its efficacy? First, it may be recalled that potency tests in monkeys are conducted on each batch of vaccine, and that all vaccine released must meet requirements of potency set by the Division of Biologics Standards of the Public Health Service. To finally evaluate the efficacy of the newer vaccines on the basis of field experience with mass use of them will require continued observation through the next poliomyelitis season. Some very tentative observations can be made, however, based on the experience with the vaccine released since September 1955, as summarized in Table 8. In this table are shown the cumulative total numbers of children under 15 years of age who by the end of each month from September 1955 had been vaccinated 30 days or more ago. Based on the experience of nonvaccinated children of the same age, some 17 cases, including 11 paralytic cases, would have been expected between October 1955 and the end of February 1956. During this time seven cases were observed, three of which were paralytic. These numbers are, of course, extremely small for statistical purposes. During this late period in the disease year, incidence rates are at their lowest and provide a narrow margin in which to demonstrate vaccine effectiveness. On the basis of these small numbers, however, the total incidence among the vaccinated was less than half the number of "expected cases," and paralytic incidence was about one-fourth. If sustained, this level of effectiveness is almost identical to that observed during the summer among children vaccinated early last year.*

Table 8 also shows continued observation during the fall and winter of the vaccinated children who received at least one inoculation last spring and were followed through the summer. About half of these children had had second inoculations with "old vaccine" in the spring, and during the late fall and winter over 150,000 more received a second inoculation with the "new vaccine." A few had boosters. This is, therefore, a mixed group having first and second inoculations with old and new vaccine, and with a very high proportion having had second inoculations. If the vaccine had had no effect, 104 cases — 68 paralytic — would have been expected. Only 42 cases were observed and the paralytic incidence was reduced from the expected 68 cases to only 11. Expressed as percentage effectiveness, this group experienced a 60 per cent reduction in total incidence and an 85 per cent reduction in paralytic incidence as compared with their nonvaccinated associates.

The experience of these two vaccinated groups offers real promise that a striking reduction in the total incidence of poliomyelitis can be achieved with the vaccine now available. Results in the newly vaccinated group encourage the belief that there has been no serious loss in effectiveness as a result of the stringent safety standards now in effect. The group vaccinated earlier gives evidence of the high degree of protection which can be expected in a population in which most have had two or more inoculations.

It is particularly noteworthy that, although the chief criterion of vaccine effectiveness has been the reduction in paralytic cases, these data indicate the vaccine is doing something more than merely converting paralytic illness to a milder nonparalytic

*As of July 15, 1956, further observations since this report was prepared have improved the estimated effectiveness against paralytic poliomyelitis to 80 per cent.

form. As the season has progressed and more children have received second inoculations, a consistent improvement has been noted in the per cent reduction of total incidence to the 60 per cent reduction shown in Table 8. It therefore appears that, as the immunization levels are built up, the vaccine has the effect, at least in some persons, of suppressing infection below a recognizable clinical threshold; whereas in others it results in lessened severity of illness and a conversion of paralytic poliomyelitis to a milder nonparalytic illness. Thus, total and paralytic rates are reduced, while nonparalytic rates are not greatly altered.

Confirmation of these impressions will, of course, require further observation. Many unanswered questions remain concerning the mechanism of action and the effects of the vaccine. Why the unexpected effectiveness of even a single inoculation? What effect does the vaccine have, if any, on silent infections, on the spread of virus through the family and the community? What are the reasons for apparent vaccine failures? What is the optimum dosage schedule? How frequently and for how long in life should booster injections be given? Answers to these questions will require further virologic and immunologic studies of poliomyelitis, coupled with extensive epidemiologic observation; but experience in California at this point has confirmed that the vaccine is safe and provides significant protection against paralytic poliomyelitis.

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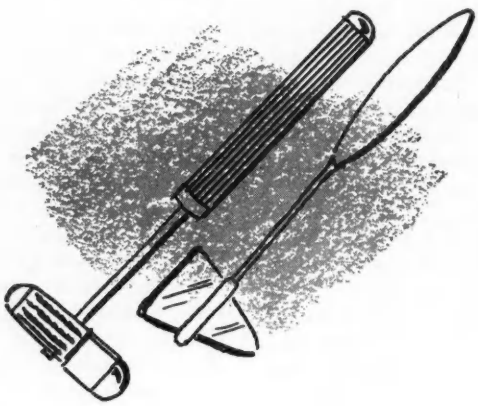

Use of Tranquilizers in Diseases of the Skin

A Preliminary Report

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• Tranquilizing agents such as chlorpromazine and reserpine were used in various diseases of the skin in which the psychogenic factors were considered important etiologic agents. While a tranquilizing effect was obtained in the majority of instances, the side reactions and variation in response were so great as to render these agents unsatisfactory for routine use as tranquilizers. Meprobamate (marketed under the trade names Miltown and Equanil) was then used on a group of dermatologic patients with more consistent tranquilizing effect and comparatively little unpleasant side reactions. It is felt that further study of the use of meprobamate as a tranquilizing agent in dermatology is worth while.

WITHIN THE PAST TWO YEARS the use of tranquilizers in dermatology has become increasingly frequent. The administration of these drugs in inflammatory dermatosis has stemmed not so much from consistent effectiveness in treatment as from the great need for an agent to reduce anxiety, nervous tension, emotional stress and pruritus. The role played by these factors in the pathogenesis and course of many of the inflammatory diseases of the skin has been adequately emphasized by Sternberg,[6] Obermayer,[2] Sulzberger,[7] Rein[4] and others.

Agents previously used to diminish the effect of psychic and emotional factors included barbiturates, chloral hydrate, bromides and the antihistamine drugs. They were unsatisfactory for the most part because of side reactions, habit formation, development of tolerance, and because sometimes they did not bring about relaxation of the patient. Hence, when chlorpromazine and reserpine became available they were given enthusiastic and widespread trial.

Some 274 patients with inflammatory conditions such as atopic dermatitis, neurodermatitis, eczematoid dermatitis, lichen planus, psoriasis and pruritus ani et vulvae were treated at the University of California Medical Center at Los Angeles and at the Veterans Administration Center Hospital with either chlorpromazine or reserpine. The observations of clinical response were varied and confusing. Therapeutic results ranged from excellent to poor. The degree of tranquilization varied greatly from patient to patient, and in a number of subjects agitation rather than a tranquilizing effect was observed. Similarly, the control of pruritus was extremely variable and while diminution of this symptom was observed, total abolition was seldom achieved without adjunctive therapy. In many instances, evidence of tranquilization was present without concomitant improvement in the dermatitis. The overall incidence of slight to pronounced beneficial effect attributed to reserpine and chlorpromazine was placed at 60 per cent in this group of 274 patients. Untoward reactions such as headache, nausea, vertigo, drowsiness, nasal congestion and depression were so pronounced in many instances as to necessitate discontinuance of the drug.

It was apparent from these early clinical observations that evaluation of the efficacy of the tranquilizers could best be accomplished by using double blind controls. Pillsbury,[3] Livingood,[2] and others aptly stressed that clinical investigation without controls can be misleading and inaccurate. This is especially true when dealing with such subjective symptoms as emotional stress, anxiety, nervous tension and pruritus. In order to attempt clarification of this problem, a study of the effect of a reserpine tranquilizer in these symptoms was instituted using controls. Fifty-two hospitalized patients were given either 0.25 mg. of reserpine or a placebo four times daily and clinical response was observed by the dermatology staff. No person participating in the study knew whether a patient was receiving the drug or the placebo, although in some instances side reactions indicated active medication. Local therapy other than a bland ointment or starch baths was withheld.

The following conditions were studied: Atopic dermatitis, 22 patients; neurodermatitis, six patients; eczematoid dermatitis, 14 patients; psoriasis and lichen planus, five patients; chronic urticaria, five patients. Of the 30 patients treated with reserpine, 16 showed improvement of varying degree, while 14 were unimproved. Tranquilization was considered a symptom of improvement even though not

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accompanied by significant skin change, inasmuch as subjective complaints were less. Of the 22 placebo-treated patients, four improved and 18 showed no improvement.

It is realized that no conclusion can be drawn from so small a series, but the results are considered indicative. The ratio of benefited to nonbenefited patients receiving reserpine therapy approximates the previous clinical experience wherein response was varied, inconsistent and unpredictable. The incidence of unpleasant side reactions was sufficiently great to cause many patients to discontinue use of the drug.

For the foregoing reasons, a new tranquilizing agent meprobamate, a carbamide derivative marketed under the trade names of Miltown and Equanil and related to mephenesin or tolserol, was subjected to clinical testing. Meprobamate possesses, in addition to muscle relaxing properties, a pronounced emotional and psychic tranquilizing effect. Its mode of action is by blocking interneuronal stimuli between cortex, thalamus and hypothalamus. Unpleasant side reactions, in the authors' experience, are infrequent and toxicity is low. Selling[5] reported that one patient took 50 and another patient 100 400-mg. tablets in a 24-hour period without serious consequences.

Either Miltown or Equanil (400 mg. four times daily) was given to 164 patients with the various kinds of inflammatory diseases of the skin dealt with in the previous study of the effect of chlorpromazine and reserpine. A tranquilizing effect, as manifested by relaxation of nervous tension, diminution of anxiety and emotional stress and lessening of pruritus, was more consistently observed and was greater in degree than was obtained with reserpine therapy. Almost all patients troubled with insomnia volunteered their sleeping habits had considerably improved. Side reactions were minimal, principally drowsiness which usually diminished after three days of therapy. Two patients complained of nausea, but it abated without continuance of treatment. Selling[5] reported urticaria and angioneurotic edema in three of 137 patients. No reactions of that kind were noted in the present study.

Clinical response of the dermatoses while varied, was more consistent than in the patients who were given reserpine. Even in cases of severe dermatitis not responding significantly to tranquilization, the calming effect, nevertheless was sufficient to make management easier. Agitation, which was not infrequently observed in patients given reserpine, was noted in but one instance in the study with meprobamate. Meprobamate was found to be particularly useful when steroid therapy was being discontinued. The results were sufficiently encouraging to indicate meprobamate may be the drug of choice in many cases in which tranquilization is desired. Additional studies are in progress.

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Acute Perforated Appendicitis in Childhood

Analysis of Management, Including the Use of Hypothermia

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• From an analysis of a recent series of 99 cases of acute perforated appendicitis in childhood several conclusions appeared valid.

1. The majority of infants and young children with acute perforated appendicitis do not exhibit the signs of localization of peritoneal irritation so characteristically seen in older children and adults. Hence if a history compatible with acute perforated appendicitis is present and there is evidence of peritoneal irritation on repeated examinations, patients of this age group may be assumed to have the disease and should be prepared and operated upon with minimal delay. Early operation after a maximum of several hours of preparation with parenteral hydration, nasogastric suction and antibiotics is the treatment of choice.

2. In nine patients in the present series with temperature and rapid pulse that did not fall to safe levels with the usual preoperative preparation, mild hypothermia appeared to reduce the risk of anesthesia and operation.

3. The use of intraperitoneal drains in children with acute perforated appendicitis is associated with a definite reduction in the incidence of postoperative intraperitoneal abscesses and with a probable reduction in the number of serious wound infections.

IN RECENT YEARS the mortality and morbidity resulting from acute perforated appendicitis in childhood have been diminishing gradually. This decrease has been the result of many factors.[1,5,8,10] However, certain problems characteristic of the disease continue to be subject to debate, and undoubtedly affect the morbidity and the residual mortality.

The first of these problems is the difficulty sometimes encountered in making the diagnosis, especially in a very young child. The second is the problem of management of a highly febrile and "toxic" child with acute perforated appendicitis who does not respond, by decrease in the temperature and in the pulse rate, to the usual preoperative measures carried on for the usual period of time. The third is the question regarding the advantage of draining the peritoneal cavity in children with this disease.

In attempting to increase understanding of these three problems, a study was made of the records of patients with acute perforated appendicitis at the Los Angeles Children's Hospital during the past five years. Ninety-nine patients with this disease were treated between January 1, 1951, and December 31, 1955. There were three deaths, a mortality rate of 3.03 per cent. Two of the deaths were due to a failure of diagnosis, each child being moribund when first seen. One was an infant 11 days of age and the other a child of two years. Operation was not done on either patient; appendicitis was noted at autopsy. The third death was due to a failure of management and the case will be discussed in further detail. The mortality rate for the group in which operation was done was, therefore, 1.03 per cent.

Often the chief difficulty in making the diagnosis may be a lack of peritoneal localizing signs.[1,3,11] It has been well established[6,8,11] that diagnostic difficulty is greatest in infants and children under two years of age. Chart 1, in which the lack of localizing signs is correlated with the ages of the patients, demonstrates this fact graphically for this series. The leukocyte content of the blood usually corresponded with the clinical findings, the average being 18,670 leukocyte cells per cu. mm., with 76.7

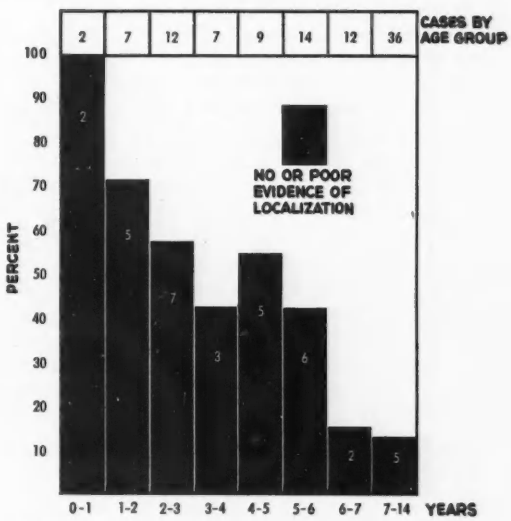

Chart 1.—Relation of peritoneal localizing signs to age of patient in acute perforated appendicitis in childhood.

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Presented before the Section on General Surgery at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

per cent polymorphonuclear cells. In 12 patients, however, leukocytes numbered 10,000 or fewer per cu. mm. Seven of these patients were three years of age or under. All had evidence of general peritoneal irritation, but none exhibited signs of localization. It is apparent that both the clinical and laboratory aids in diagnosis may be doubtful in a very young patient with acute perforated appendicitis. However, it is usually possible to rule out extraperitoneal causes producing signs of peritoneal irritation. Since the penalty for delay in operating upon a patient in this age group with this disease is so much greater than that for laparotomy with a mistake in diagnosis, the policy at Los Angeles Children's Hospital is to prepare and operate upon such children without undue delay, provided the history is reconcilable with acute appendicitis and there is evidence, on repeated examinations, of peritoneal irritation not otherwise accounted for. Signs of localization are not considered essential for the diagnosis.

Occasionally a child with evidence of acute perforated appendicitis enters the hospital with an unusually high fever and rapid pulse and neither is reduced to safe levels by the usual preoperative preparation. Forty-four patients were admitted with temperatures of 39° C. (102.3° F.) or more. Accompanying tachycardia, a rate of 140 per minute or greater, was noted in 34 of them. Nine of these children did not respond, by appreciable fall in temperature or pulse, to parenteral hydration, nasogastric suction, administration of antibiotics and simple cooling measures carried on for periods of eight hours or more. When faced with this problem a surgeon has two choices. He may delay operation indefinitely, awaiting localization of the peritonitis. This policy is associated with a greater morbidity and often greater mortality in this age group, since the peritoneum of young children appears less capable of effecting localization of a suppurative process than that of the adult.[3,6,8,9] The only surgical death in the present series of cases occurred when operation was delayed because tachycardia did not decrease during the usual period of preparation. The patient was a six-year-old girl who had had symptoms for six days prior to admission in May, 1951. Upon entry, although the temperature was only 38.5° C. (101.4° F.), the pulse was 160 and the general condition of the patient was poor. After 40 hours of supportive and antibiotic treatment the rectal temperature was 41.1° C. (106° F.) and the pulse rate 180. Drainage of the iliac fossa was then carried out under local anesthesia. However, evidence of the peritonitis remained, residual subhepatic and pelvic abscesses being found at a later operation, and a residual left subphrenic abscess at autopsy.

The surgeon's second choice of management in the occasional case of the highly febrile child who has not responded to the usual preoperative preparation is to proceed with the operation in spite of the fever and rapid pulse. Although he avoids the penalty of delayed operation, he encounters three other serious risks associated with anesthesia and operations in children with a high fever and tachycardia. The first is "ether convulsion," a series of generalized convulsions which may occur in febrile children under deep anesthesia. The convulsions appear to be due to carbon dioxide retention, and unless rapidly controlled by intravenous barbiturates and hyperventilation they may be fatal. The second risk is the development of circulatory failure secondary to increasing tachycardia. The rapid pulse first appears in the febrile patient as a compensatory mechanism—an attempt to bring about proper oxygenation of tissues whose metabolic requirements are greatly increased due to the fever. The heart rate may rise to a level wherein the diastolic filling of the ventricles becomes inadequate, causing circulatory collapse.

The third serious risk of anesthesia and operation in a febrile child is postoperative hyperpyrexia. This is a rare complication in which high postoperative fever is associated with severe central nervous system damage, occasionally leading to death. It is thought to be due to suboxygenation of tissues of the brain due to insufficient compensation for the increased oxygen demand occasioned by the fever.

During the period of this study, early operation was carried out in all children after a period of preoperative preparation averaging four hours and ranging from a minimum of 30 minutes in the most favorable case to 17 hours maximum in the most "toxic" case. The one (fatal) exception to this regimen has already been noted. The only other delay occurred in an eight-year-old girl in whom an appendiceal abscess was present on admission. From 1951 to 1954 the anesthetic risks occurring in children whose temperature and pulse remained unusually high in spite of adequate preoperative preparation were successfully avoided. This was done by using a fairly heavy preoperative medication (consisting of a barbiturate, an opiate and scopolamine) followed by nitrous oxide analgesia, with local procaine employed by the surgeon. At best the operating conditions so produced can be described as "fair." During the year 1955, the complications of anesthesia in these highly febrile children with acute perforated appendicitis were avoided by employing preoperative external cooling, which produces mild hypothermia and concomitant reduction of the pulse. This procedure appears to afford a degree of safety equal to or greater than that afforded by the previous

TABLE 1.—*Relationship of Type Drainage to Incidence of Complications in Acute Perforated Appendicitis in Childhood*

Type Drainage	Cases	Postoperative Intra-abdominal Abscesses		Postoperative Intestinal Obstruction		Wound Infection*	
Peritoneal drainage	68	5	(7.3%)	3	(4.4%)	5	(7.3%)
Drain into abscess	3	0		0		0	
Wound drain only	17	4	(26.9%)	1	(3.8%)	2	(11.5%)
No drains	9	3		0		1	

*Infection of sufficient severity to require further operation or to prolong hospitalization.

method and in addition allows the anesthesia to be given more electively so as to produce better operating conditions for the surgeon. Cooling has been kept to a minimum of 30° C. (86° F.), and to an average of 34.7° C. (94.4° F.) rectal, thus avoiding the complications sometimes encountered with more extensive hypothermia. The technique is described elsewhere.[2] Nine patients of this series were so treated. The hypothermia had no clinical effect upon the peritonitis nor upon response to antibiotics. The postoperative course of the patients subjected to hypothermia differed in no way from the course of those in whom it was not used. The cooled patients returned to normal temperature in an average of one hour and 41 minutes, and thereafter rapidly reached the febrile state usually seen postoperatively in children with this disease.

At present preoperative external cooling is being used for children with acute perforated appendicitis whose temperature remains 39° C. (102.3° F.) or greater, or whose pulse remains 130 per minute or more after four to eight hours of the usual preoperative preparation. Cooling is governed by the heart rate and is continued until the pulse falls to the range of 90 to 110 per minute.

The subject of draining the peritoneal cavity after appendectomy for acute perforated appendicitis in childhood has been much discussed by a number of investigators.[3,4,5,6,7,8,9] In theory, peritoneal drainage is used primarily to prevent the accumulation of residual intraperitoneal collections of pus, and secondarily to minimize infections of the wound. Table 1 shows the types of drainage used in the present series, their relationship to the incidence of these two complications and also to the incidence of postoperative intestinal obstruction. Residual peritoneal abscesses occurred in 7.3 per cent of the patients who had peritoneal drainage and in 26.9 per cent of those who had not. One must conclude that when peritoneal drainage is omitted in the treatment of acute perforated appendicitis in children the risk of occurrence of residual intraperitoneal abscesses is greatly increased. The incidence of postoperative intestinal obstruction in this series showed no significant relationship to the type of drainage, but the occurrence of serious postoperative wound infection appeared to be somewhat greater when peritoneal drainage was not used. The morbidity of acute perforated appendicitis as expressed in hospital days varies with the occurrence of complications and with the use of peritoneal drains (Table 2). In spite of the advantage of shortening the hospital stay in uncomplicated cases in which such drains have been omitted, the average data indicate that the added risk of complications when peritoneal drainage is not used cancels out this advantage.

TABLE 2.—*Morbidity of Acute Perforated Appendicitis in Childhood*

Type of Case	Number	Days Hospitalized (Average)
Peritoneal drainage	68	13.4
No drainage	26	12.5
Abscess drained	3	13.3
With complications	21	22.2
Without complications	75	10.8

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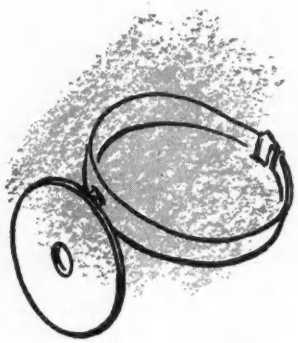
Discussion by EDWIN CLAUSEN, M.D., Oakland

Dr. Brayton has emphasized three important aspects in the diagnosis and management of acute appendicitis with perforation in children. At the Children's Hospital of the East Bay in Oakland, from 1946 to 1955 we had 822 cases of acute appendicitis of which 100 were perforated. We also were impressed by the absence of localizing signs, especially in the young child. Since the history is of relatively little value in the diagnosis in these young children, the physical examination is very important. The majority of this group were seen and not diagnosed prior to perforation. There seemed to be little delay in diagnosis once peritonitis was established.

Preparation of the toxic febrile child is logical but often neglected. Administration of parenteral fluids and nasogastric suction does not necessarily prepare the child for operation. It is obvious that a detailed preparation has been instituted at the Los Angeles Children's Hospital. Although we did not have any of the anesthetic complications described, varied convulsive acts are not uncommon. An experienced anesthesiologist can quickly control these with intravenous barbiturates and hyperventilation through an intratracheal tube. All our seriously ill patients are intubated. We have not used hypothermia. Although Dr. Brayton's experience is limited, one cannot but be impressed by its logic. Keeping the temperature at a reasonable level should prevent any of the undesirable effects of hypothermia. Feeble attempts toward hypothermia has been a standard procedure for toxic febrile children. However, a more enthusiastic approach seems logical.

I am interested in the large number of cases in which intraperitoneal drainage was used. We only drained the peritoneum in 22 per cent of the cases. Our average hospital stay was about the same as that reported by Dr. Brayton. We do not use intraperitoneal drainage unless a definite abscess is present or the retroperitoneal spaces have been exposed.



Pulsating Lesions Metastatic from Renal Cancer

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• **The differential diagnosis of a pulsatile mass found on physical examination should include metastasis from a carcinoma of the kidney. If the mass occurs in the region of the sternum with no abnormality noted in the thyroid gland upon examination, the primary tumor is most frequently in the kidney even though there may be no symptoms referable to the urinary tract.**

PULSATILE MASS palpated in the course of physical examination of a patient may be diagnosed immediately as an aneurysm and consequently further definitive diagnostic steps unduly delayed. Since the cases to be described herein aroused considerable interest on the wards as to various diagnostic possibilities, a brief review of the pertinent literature was thought to be indicated.

Paget,[10] in a discussion of tumors of the ribs and sternum, pointed out that "sarcoma of the sternum has been mistaken for aneurysm and aneurysm for it," but in none of the 23 cases listed were the lesions described as pulsating. Eshner[4] (1908) reported a case of hypernephroma of the kidney with metastasis to the manubrium which simulated an aneurysm of the aorta. In 1915 Taylor[12] described a case of multiple pulsating tumors secondary to hypernephroma. MacLeod and Jacobs[6] (1921) described two cases in which pulsating sternal masses were at first diagnosed as aneurysms of the aorta. Upon histologic study it was noted that both lesions were metastatic from hypernephroma of the kidney, and the primary tumor was confirmed in one case by autopsy.

Dresser[3] discussed the manifestations of hypernephroma in bone and reported ten cases, in two there were pulsating metastatic lesions. One occurred in the upper sternum and the other in the medial portion of the clavicle and the manubrium. In 1926 Alessandri[1] described four cases of bony metastasis from hypernephroma. In three of them the lesions were pulsating: one in the parietal area, one in the dorsum of the left foot and one in the scapula. In an extensive review of the literature he noted that of 92 metastatic lesions reported, 27 were either pulsating or highly vascular. He pointed out that in a number of cases the bony lesion was the only apparent metastasis.

Fabre[5] (1935) reported a case in which there was a pulsating tumor in the right first interdigital space. Upon postmortem examination a hypernephroma at the inferior pole of the left kidney was observed.

Crile[2] (1936) reported four cases of pulsating tumors of the sternum. One of the lesions was metastatic from a hypernephroma and three were metastatic from thyroid carcinoma. In a review of the literature, Crile could find no reported case of a verified pulsating primary neoplasm of the sternum or a pulsating tumor metastatic from carcinoma of the breast. Of a total of 18 pulsating neoplasms of the sternum, nine were probably metastatic from hypernephroma and nine from carcinoma of the thyroid. In eight of the nine cases metastatic from hypernephroma, sternal pain or the appearance of tumor preceded the development of any urinary symptoms. In the cases in which the lesions were metastatic from the thyroid, the first symptoms were caused by the primary tumor or by metastasis to regions other than the sternum in six of the nine cases. Roth and Davidson[11] (1937) reported on a case in which a pulsating sternal mass proved to be metastatic from hypernephroma.

Mider and Morton[8] reported on pulsating benign giant cell tumors of bone. They collected reports of four cases from the literature and added one of their own. All were proved histologically and the lesions were located as follows: lower radius, lower one-third of ulna, dorsolumbar region, internal part of head of tibia, and left sacroiliac.

Nalle[9] (1947) reported on a patient with a pulsating mass in the left shoulder and in the left inguinal region. Retrograde pyelograms showed changes compatible with cancer, but autopsy was not done.

REPORTS OF CASES

In a review of the records at the San Francisco Veterans Hospital for a period of seven years, four cases with pulsating metastatic lesions were found. Three of the patients (Cases 2, 3 and 4 in the following report) were seen by one or both of the authors.

CASE 1. A 52-year-old white carpenter entered the Veterans Administration Hospital, San Francisco,

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Submitted June 30, 1955.

in April, 1947, with complaint of a painful lump over the right hip for two months. A sister had a tumor of the large bowel (type unknown) removed some seven years previously, when she was 25 years of age.

The patient considered himself well until November, 1945, when, while working on a ladder, he fell and injured his left flank. Following this he had blood in the urine and passed some clots. These symptoms continued intermittently until his admission to another hospital where left nephrectomy was performed in February, 1946. The patient was then well until the mass over the right hip gradually developed over a period beginning in February, 1947. This mass subsequently became painful, and it was reported that upon needle aspiration prior to entry to the hospital "a cup of blood" was withdrawn. During the two months preceding admittance, the patient's weight decreased 15 or 20 pounds.

The patient appeared pale and chronically ill. The blood pressure was 145/85 mm. of mercury, the pulse rate 84. Hearing was subnormal in both ears. There was a 7 x 8 cm. flat, freely movable, nonpulsating mass underlying the left breast. Many veins radiated in all directions from the mass, and a blowing systolic murmur was heard over it. Over the right sacroiliac joint there was an 8 x 8 cm. fixed round mass which was warm and pulsating. Many blood vessels radiated from it, and a loud systolic murmur was audible over it.

The hemoglobin content of the blood was 10.0 gm. per 100 cc. Mean corpuscular volume was 85.3 cu. microns, the mean corpuscular hemoglobin 23 micromicrograms and the mean corpuscular hemoglobin concentration 27 per cent. X-ray films showed destruction of the right fourth rib in the axillary region, the left fourth rib anteriorly, the anterior portion of the body of the fourth thoracic vertebra and the superior portion of the right ilium and adjacent portion of the sacrum.

Slides of specimens of the kidney that was removed in February, 1946, were obtained and the diagnosis was clear cell carcinoma of the left kidney. X-ray therapy to the mass over the hip gave temporary alleviation of pain. A second pulsating mass developed subsequently in the right midaxillary line. A systolic murmur was audible over it. The mass beneath the left breast enlarged but did not pulsate. However, a murmur still could be heard over it as well. The condition of the patient deteriorated steadily and he died August 17, 1947. Permission for autopsy was refused.

* * *

CASE 2. A 61-year-old Russian-born white man, a woodshop worker, entered the Veterans Administration Hospital, San Francisco, for the first time December 17, 1951, with complaint of painful swelling of the right wrist for two months.

Approximately a year previously a nodule had been removed from above the right eye and the patient was then advised he should be studied for a possible tumor elsewhere, but he said he felt well and declined. About two months before admittance to the Veterans Administration Hospital, a swelling developed on the right wrist and another on the right chest wall. The patient had no symptoms referable to disease of the urinary tract but the body weight had decreased 40 pounds during the preceding year.

The blood pressure was 150/100 mm. of mercury and the pulse rate 76. An egg-sized mass was palpated in the right pectoral muscle. This lesion was not attached to bone or skin, but there was pronounced venous distention over it. In addition, there was nonpulsating mass 5 cm. in diameter at the right radial head with increased skin temperature and vascularity over it.

The hemoglobin content was 14.6 gm. per 100 cc. Erythrocyte sedimentation was 37 mm. in one hour. Leukocytes numbered 16,500 per cu. mm.—65 per cent polymorphonuclear cells with a 51:14 ratio of segmented to banded forms, 30 per cent lymphocytes, 4 per cent monocytes and 1 per cent basophils. The specific gravity of the urine was 1.035. It contained no albumin and no abnormalities were observed microscopically.

Upon roentgenographic examination three soft masses 1 cm. in diameter were seen within the lungs, and a destructive lesion in the distal end of right radius. Excretory urograms showed a large mass in the inferior pole of the left kidney.

The tumor on the wall of the chest was excised. It was a clear cell carcinoma, presumably metastatic from the kidney. Slides from the original lesion from above the right eye were obtained and these also showed clear cell adenocarcinoma probably metastatic from the kidney. X-ray therapy of the wrist lesion diminished pain somewhat. On April 12, 1952, gross hematuria occurred. On November 11, 1952, the patient was again seen with a mass on the right wall of the chest in addition to the lesion still present on the right wrist. Excretory urograms were essentially unchanged. When the patient was admitted to the hospital for the fourth time on April 27, 1953, the lesion on the wrist had increased two or three times in size and had become soft and warm. Both it and the mass over the right anterior chest were pulsatile. The patient died July 5, 1953, and permission for autopsy was denied.

* * *

CASE 3. A 50-year-old white man entered the Veterans Administration Hospital, San Francisco, for the first time September 23, 1951, with pain and weakness of the right upper extremity for three weeks. The left upper extremity had been amputated following injuries incurred in combat in 1917. In 1947 an exploratory laparotomy had been done because of a palpable mass in the left upper quadrant of the abdomen and recurring epigastric pain. The mass was in the left retroperitoneal space. A biopsy specimen was obtained and the diagnosis was adrenal adnexa. The patient was treated with x-ray for five weeks and the size of the tumor was halved.

In April, 1948, the patient was again operated on and an 820 gm. encapsulated tumor was removed from the left retroperitoneal space. It was diagnosed as a benign adrenal adenoma. In September, 1951, the patient meanwhile having been well except for a minor episode of trauma to the right elbow in December, 1950, he had abrupt onset of severe pain in the right upper extremity radiating from the elbow to the shoulder and sometimes to the scapula. Progressive weakness of the fourth and fifth fingers developed.

Upon admittance to hospital the blood pressure was 180/100 mm. of mercury and the pulse rate 76. The left anterior chest was noted to be slightly prominent. There was weakness of the triceps, flexors and extensors of the wrist and diffuse muscular weakness in the right hand, especially the fourth and fifth fingers. The triceps reflex was absent in the right arm (the left arm had been amputated) and there was diminished sensation to pain over the fifth finger.

No abnormalities were noted upon examination of the blood and the urine. Detailed roentgen studies of the cervical spine on December 6, 1951, showed a destructive process on the inferior aspect of the seventh cervical vertebra. No abnormalities were noted upon examination of cerebrospinal fluid.

Slides of the tumor removed in 1948 were reviewed and they were thought to show malignant neoplasia, probably of renal origin. Hence it was felt that the cervical lesion was metastatic and the neck was treated with x-ray with some improvement of symptoms. The patient was again admitted to hospital in October, 1952, and a hard, slightly tender mass was noted over the entire sternum below the manubrium. Sensory and motor function of the right arm seemed intact. No changes from the previous x-ray films of the cervical spine were noted.

The patient was admitted again in March, 1953, for recurrent pain in the neck and shoulders with radiation into the right upper extremity. The sternal mass was considerably enlarged and for the first time pulsation in it was noted. A systolic murmur was audible over it. X-ray films of the cervical spine were unchanged and upon complete examination of the patient no metastatic lesion other than that in the sternum was observed. It was concluded that the changes in the neck represented an old traumatic lesion. Therefore the chest lesion and the sternum were removed and a polyethylene plate was installed over the defect. Three months later the plate was removed because of bleeding that occurred when recurrent accumulations of fluid above it were withdrawn. The underlying structures had stabilized meanwhile. It was learned indirectly that the patient died in his home town. The exact date and details were not obtainable.

* * *

CASE 4. A 60-year-old white male laborer entered the Veterans Administration Hospital, San Francisco, September 3, 1952, with complaint of anterior chest pain.

TABLE 1.—*Vascular Tumors Occurring in San Francisco Veterans Administration Hospital Over a 7-Year Period*

Diagnosis	No. of Cases	No. of Cases with Local Extension and/or Distant Metastasis	No. of Cases with Pulsating Primary or Metastatic Lesion
Carcinoma of the kidney (hypernephroma)	19	15	4
Transitional cell carcinoma of the kidney	1	0	0
Adenocarcinoma of the thyroid	12	9	0
Thyroid carcinoma, metastasis from the bowel	1	1	0
Hemangiomata, various types	13	0	0
Osteogenic carcinoma	4	2	0
Osteolytic sarcoma	1	0	0
Chondromyxosarcoma	1	0	0
Periosteal fibrosarcoma	1	0	0
Liposarcoma	1	0	0

The patient considered himself in excellent health until April, 1952, when he had had sudden onset of right shoulder pain accompanied by weakness of the right arm. He was examined a few months later and told that he had a "heart condition." He continued to have a persistent dull ache in the right upper chest with some radiation to the back. This pain was aggravated by forward bending. On July 17 he had sudden onset of severe substernal pain without radiation. It lasted several hours but there was no accompanying perspiration, collapse, dyspnea or palpitations. As the pain had not completely subsided after three days of rest in bed the patient sought admission to the hospital. The blood pressure was 160/90 mm. of mercury, the puse rate 72. The patient was healthy appearing and the only physical abnormality noted was a 5 cm. pulsatile, tender, soft mass in the region of the manubrium and slightly to the right of the midline. No abnormalities were noted on examination of the blood and the urine. An electrocardiogram showed left ventricular hypertrophy but no myocardial infarction.

X-ray films of the cervical spine showed narrowing of three intervertebral spaces with associated hypertrophic changes. The central portion of the manubrium was destroyed. Excretory urograms and retrograde pyelograms showed a distortion of the excretory ducts on the left and possible cysts on the right. No other abnormalities were noted in a complete roentgenographic survey.

Upon exploration the right kidney was found to contain a benign cyst. After the patient recovered, the left kidney was removed and upon microscopic examination a diagnosis of clear cell carcinoma of the kidney was made. Since no lesion other than that in the sternum was found, the upper half of the sternum and the tumor were removed on January 5, 1953. A wire sternal prosthesis was installed but was removed in August, 1953, because of a persistent draining sinus tract. The area was then skin-grafted successfully. When last observed, February 15, 1955, the patient was feeling well and there was no clinical evidence of recurrence.

The records of the hospital for a seven-year period were reviewed, with attention to tumors that were thought to be sufficiently vascular, either as primary tumors or as metastatic lesions, to enter the differential diagnosis of a pulsating lesion. The results of this review are listed in Table 1.

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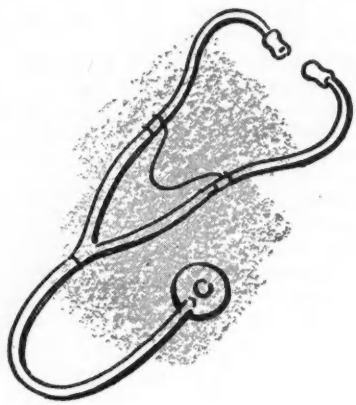

Reserpine and Chlorpromazine

Their Use in Alcoholic and Geriatric Patients

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• **Although reserpine and chlorpromazine had tranquilizing effect on a number of geriatric and alcoholic patients in a state hospital, several complicating results were noted, some with a bearing on the patients' health and others that might affect the assignment of personnel.**

Lipoprotein studies carried out on patients receiving reserpine seemed to indicate that a reduction in the blood levels of the denser lipoprotein molecules took place during therapy.

Several elderly patients receiving chlorpromazine died of diseases that were not as sharply manifest by symptoms as they might be expected to be. Hence the need for closer observation than a limited staff could afford seemed a matter for consideration. Another consideration of the same order was the possible need for increased personnel for psychotherapy in light of the more receptive condition of the patients.

AT THIS TIME a report of the direct clinical results of reserpine and chlorpromazine in hospitalized geriatric and alcoholic patients does not appear to be as important as a discussion of some of the less obvious implications that have been noted in the use of these drugs in the treatment of such patients.

The observations here discussed deal primarily with the use of reserpine and chlorpromazine in 33 chronic geriatric patients, and the use of chlorpromazine in 15 newly admitted patients with alcoholism.

Reserpine

In 23 chronic geriatric patients who received reserpine, the effects seemed to vary according to the dosage. From 0.5 mg. to 6.0 mg. daily was used, according to the patient's ability to tolerate the medication and according to the apprehension of the individual physicians using the drug. Agitation and disturbed behavior was decreased. The patient became more tractable, more cooperative and less demanding. Confusion, disorientation, loss of memory and other signs of organic involvement did not appear to be greatly affected, nor did the course of depressions seem to be greatly altered. Some of the bedridden patients became ambulatory or at least were able to sit in a wheelchair for part of the day. Three were eventually able to be considered for a leave to stay with relatives. On the other hand, the lethargy that was produced in some patients was a deterrent to further use of the medication after a few weeks. These results would appear to corroborate the general information at present available about reserpine, with but one additional and perhaps important finding.

In a group of nine geriatric patients to whom reserpine was given, cholesterol and blood lipoprotein determinations were obtained.* These patients were given dosages from 1.0 mg. to 2.0 mg. daily for a three-week period and were then given 6.0 mg. daily. In five of these patients this dosage was continued for a period of more than six weeks; in the other four the medication was reduced or discontinued within a one to six-week period because increased lethargy was considered detrimental to the patient. None of the nine patients showed any considerable psychiatric improvement. However, within this entire group seven patients showed a definite drop in the blood level of the heavier and more compact lipoprotein molecules (S_f 0-12). Three weeks after discontinuance of the drug, the content of these molecules in the blood had returned to the premedication level in only one of the seven patients. Six weeks after discontinuance, results were available on five patients. In only one of them was the amount of S_f 0-12 lipoprotein back to premedication level, although in the others it was showing a gradual return. Two of the nine patients showed no response. In the next lighter group of molecules (S_f 12-20) there was less change, although the same seven patients showed indications of a drop. Of these seven, five showed a return to premedication level within three weeks after termination of the

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From the Stockton State Hospital, Stockton.

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*These determinations and the processing of data obtained, as well as the lipoprotein studies on the geriatric patients receiving chlorpromazine were carried out by John Gofman, M.D., and Beverly Strisower, A.B., Department of Medical Physics, University of California.

drug. Two again showed no response. In the seven patients who showed a lipoprotein drop, blood cholesterol determinations during the period of medication showed a corresponding reduction. Again the two patients showing no response in the blood lipoprotein levels showed no appreciable change in blood cholesterol. It appeared further that the patients with higher initial blood lipoproteins and blood cholesterol levels showed a greater drop on medication.

Because of the small series, these results cannot be considered conclusive, but they do give a strong indication that reserpine affects the body's lipoprotein metabolism in some way not yet clearly understood. It indicates that reserpine has its strongest effects on the denser lipoprotein molecules (S_f 0-12). Other studies[1] indicate that desiccated thyroid also influences the level of these molecules although not apparently in the same manner. Further studies to give more conclusive information on this phenomenon are in preparation.

Chlorpromazine

Results with the use of chlorpromazine on newly admitted alcoholic patients, many of whom either were having or seemed about to have delirium tremens or alcoholic hallucinosis, did not vary substantially from the general trends indicated in the pharmaceutical circulars. Restlessness, apprehension, tremors and nausea and vomiting were reduced and on occasion eliminated with a dosage of 200 mg. to 400 mg. daily for periods varying from three days to two weeks depending upon the severity of symptoms. The need for other sedation seemed to be reduced. The confusion, disorientation and memory loss did not appear to be dramatically affected by the use of the drug. The transitory depressions that occur on recovery from an acute bout of alcoholism still appeared. Generally it seemed that the patient became more tranquil and less demanding, and that he tended to complain less of physical symptoms. Administration of chlorpromazine with other specific medication for concurrent illness appeared to be a desirable method of managing the patient during the early days of hospitalization.

In an attempt to evaluate the effects of chlorpromazine on a smaller scale with chronic geriatric patients, a group of ten men was selected. Seven of them were over and three under age 60. The dosage was gradually increased from 50 mg. daily to 400 mg. daily. The only untoward side effect observed was subclinical jaundice which developed in one of the younger patients. However, five of the patients over 60 years of age died within six weeks of starting the drug. These results were not at all in keeping with the observations in other groups in the same hospital either with reserpine or chlorpromazine. An investigation of the causes of death indicated the following: Three patients showed some clinical signs of bronchopneumonia. In one this disease was confirmed at autopsy. One patient died in a diabetic coma, and at autopsy pulmonary edema with questionable pneumonia was noted. In the fifth case indications of mesenteric thrombosis and pronounced aortic atheromatosis were observed at postmortem examination.

In all five deaths the terminal illnesses appeared to be rather acute. Several physicians observing the patients were all impressed with their noncritical appearance in the terminal state. None of the patients had any of the usual indications of drug intolerance other than that of fever. There were no indications whatsoever that chlorpromazine was directly a cause of death, but conclusions drawn at the hospital from analysis of each case were that chlorpromazine lessened the clinical manifestations of the concurrent illnesses by its tranquilizing effect. The apprehension, anxiety and restlessness of the patient in distress were masked and distorted to such a degree that the medical staff was lulled into a false sense of security until the patient entered an irreversible terminal state.

Blood lipoprotein determinations were carried out in this group as well. No significant lowering of the blood lipoprotein or cholesterol levels was apparent in the short time the drug was administered. Further studies are indicated, since of necessity these findings are inconclusive.

DISCUSSION

In limited experience with the use of these drugs in newly admitted alcoholic patients and on the chronic geriatric services, it was observed that the tranquilizing effects of these drugs, while desirable, can be hazardous as well. The administration of these drugs to a large number of patients requires critical observations that are not within the realistic capabilities of the personnel of the usual grossly understaffed state hospital ward. It appears, therefore, that the time and effort saved in coping with the agitated, disturbed and demanding patient must be given over to closer observation. Again, when the withdrawn patients improve, additional time must be spent with them in carrying out a positive treatment program in which the tranquilizing drugs are but a part. This holds true in the alcoholic group as well. Although less time was spent in dealing with the individual's apprehension, more time had to be spent in observing him for side effects and more time had to be spent on some occasions in encouraging the patient to participate in the active treatment program.

CONCLUSIONS

Experiences with reserpine and chlorpromazine led to the following impressions:

Tranquilizing drugs are valuable adjuncts to therapy, but the serious hazards associated with them must not be underestimated on overcrowded, understaffed wards.

As long as we have before us the goal of suppression of symptoms and not the treatment of the sociobiological entity of the patient, we can claim only partial results and we must be prepared to treat recurrences of illness.

Reserpine, but not chlorpromazine, appears to cause a lowering of the same lipoprotein molecules in the blood as desiccated thyroid, but not in the same manner.

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Correction

In the article, "Surgical Treatment of Pulmonary Tuberculosis—A Decade of Change," by John S. Chambers, M.D., in the June 1956 issue of CALIFORNIA MEDICINE, an error was made in the printing of the summary. The phrase, "in favor of extraperiosteal plombage, particularly in older, poor risk patients," which appeared at the end of the third paragraph of the summary, should have been printed at the end of the fourth paragraph instead.

The third and fourth paragraphs should read:

> **Pneumoperitoneum has replaced other forms of temporary collapse. Pneumothorax, phrenic nerve interruption and pneumonolysis have been abandoned.**
>
> **The use of permanent collapse measures as definitive treatment has decreased, thoracoplasty and extrapleural pneumothorax having been virtually abandoned in favor of extraperiosteal plombage, particularly in older, poor risk patients.**

The Use of Blood at a Large Red Cross Center

An Evaluation of Various Aspects of Utilization

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• **During the past ten years over 1,000,000 pints of blood have been collected at the Los Angeles Regional Red Cross Blood Center.**

In addition to the progressive increase in the number of whole blood transfusions there has been a greater use of specific blood elements which results in purposeful and economical hemotherapy.

With the increased use of blood there has also been a growing awareness of transfusion reactions and dangers. Serious transfusion complications reported have been due to bacterial contamination, to hemolytic reactions, to homologous serum jaundice, and to a mistake in cross-matching.

Surgeons and anesthetists must pay strict attention to the use of blood since anesthesia masks severe hemolytic transfusion reactions.

At present there is no way of eliminating the danger of the transmission of virus disease (infectious hepatitis and homologous serum jaundice) in blood transfusions.

THE FIRST HOSPITAL BLOOD BANK in this country was started in 1936 at the Cook County Hospital in Chicago. With the increased demand for blood each year since then and with the impetus from the experience of World War II, a natural development was the creation of Community Blood Centers to obtain and offer adequate blood supplies.

The Los Angeles Regional Blood Center, which conducts one of the largest community blood programs, is sponsored jointly by the Los Angeles County and the Orange County medical associations and the American National Red Cross (21 participating chapters of the Red Cross).

Located in a medical center having three medical schools, this program is fortunate in having pathologists, hematologists and internists with wide experience and interest in the blood field as active members of advisory committees of the county medical societies' Blood Center. With the technical supervision given by these advisors and with the strictest conformity to the regulations of the Biologics Division of the California State Health Department and the National Institutes of Health, it is felt that the Los Angeles Regional Blood Center is providing as safe a bottle of blood as is possible.

The yearly increase in collections for civilian use from 1946 through 1955 is shown in Table 1.

The continuous increase in the use of blood by civilian hospitals in the community coincided with a tremendous growth of population in the area, but at the same time there was also a definite increase in the use of blood per hospital bed. In 1948 an average of four to five pints of blood was used annually per hospital bed; in 1955 the average was approximately ten pints.

The community blood center has also made available liquid plasma, frozen plasma and blood fractions. The distribution of these derivatives during the past three years is as follows:

Derivative	1953	1954	1955
Antihemophilic plasma (50 cc.)	312	1,826	4,658
Frozen plasma (250 cc.)	90	90	92
Liquid plasma (350 cc.)	1,877	441	355
Red blood cells (250 cc.)	804	710	877
Serum albumin (20 cc.)	139	77	108
Serum albumin (100 cc.)	250	553	948

The decreased use of liquid plasma is due to its restricted availability since most of the blood that is collected by the Red Cross and not used as whole blood is converted into blood fractions.

Fibrinogen was made available to the Los Angeles Red Cross Blood Center in the fall of 1953. Since that time, 24 units of it has been distributed for use in specific cases.

The authors are medical directors of the Los Angeles Regional Red Cross Blood Center.

Submitted February 10, 1956.

TABLE 1.—*Yearly Increase in Collections of Blood for Civilian Use by the Los Angeles Regional Blood Center*

Year	Pints Collected	For Civilian Use	To Department of Defense
1946	4,217	4,217	.....
1947	11,281	11,281	.....
1948	21,123	21,123	.....
1949	45,693	45,693	.....
1950	84,570	72,266	12,404
1951	197,432	93,315	104,117
1952	203,444	102,179	101,265
1953	196,359	110,305	86,054
1954	167,154	120,453	46,701
1955	144,291	133,274	11,017
Totals	1,075,664	714,106	361,558

As knowledge of their uses and the availability of blood fractions develop, the trend will be for the use of the blood element specifically needed for the particular patient. In many instances, the administration of red cells is indicated for anemia and the giving of whole blood is at best wasteful and may even be harmful. A patient with bleeding due to afibrinogenemia will be given only fibrinogen; one with a deficiency in gamma globulin will receive only gamma globulin; one with nephrosis will be given only serum albumin; and one with hemophilia will receive only frozen plasma or antihemophilic plasma. This will result in purposeful and economical hemotherapy.

The use of blood as a therapeutic agent is still in its infancy. With the increased use of blood, resulting in the saving of many lives, there has also been a proportionate increase in transfusion reactions, accidents and iso-immunization problems. Recent reports estimate the mortality from blood transfusions to be approximately one death in 1,000 to 3,000 transfusions. Considering that about 3,500,000 transfusions are given yearly, the number of deaths would be about 1,750, which would make blood transfusion as important a cause of death as appendicitis or anesthesia.[8]

It is the policy of the Los Angeles Regional Blood Center to have the hospitals report their transfusion reactions to it each month. The milder allergic and pyrogenic reactions reported to the Blood Center are usually of minor consequence. To illustrate, below is a recapitulation of the experience in the past three years at the Children's Hospital, Los Angeles:

Year	No. Units Blood	Reactions	
		Number	Per Cent
1953	1,762	44	2.5
1954	1,749	57	3.26
1955	2,077	50	2.4

With care taken in the medical history of the donor, one rarely hears of the transmission of malaria or infectious diseases. In blood-banking there need not be too much concern with the transmission of syphilis, since the Treponema pallidum cannot survive 72 hours at 4° to 10°C. In the select group of donors who voluntarily donate blood through the Red Cross Regional Center, the proportion who have serologic tests positive for syphilis is comparatively small. Of 136,587 serologic tests performed in 1955, the number positive for syphilis was 212, or 0.15 per cent.

In spite of the use of disposable sterile equipment, bacteriological surveys quoted in other publications have shown as high a proportion as five to ten per cent of specimens of bank blood to be contaminated with bacteria. The bacterial contaminants in most cases are Gram-positive, do not grow at refrigerator temperature and are nonpathogenic. Where pathogenic bacterial contamination has caused death, the organisms have been either of the Pseudomonas or of the coli-aerogenes groups.[8] The Los Angeles Center has had reported to it one fatal reaction caused by bacterial contamination. The contamination was in a bottle of blood which had been sent from a blood center in another state.

The greatest number of deaths from blood transfusions are caused by the administration of incompatible blood. Noncompatible blood produces intravascular hemolysis resulting in chills, high fever, nausea, pain in the lumbar area and legs, and a sensation of substernal constriction and throbbing headache. The pulse rate increases, the respirations become labored and rapid, and signs of circulatory collapse may last from a few minutes to 24 hours. Jaundice and anuria of varied severity occur.

Under anesthesia these symptoms of hemolytic reactions are absent, but there may be an increase of blood oozing into the operative wound, and duskiness of the skin usually occurs. This increased hemorrhagic tendency has sometimes been referred to as exsanguination purpura.[2]

It is important to know the cause of the reaction. In suspected hemolytic or incompatibility reactions, the cause can be determined by checking the pretransfusion and posttransfusion specimens of the patient's blood with the donor's blood.

The clinician or surgeon depends entirely on the laboratory for all the important tests to determine the compatibility and safety of the blood for the patient. Not only must he rely on the technical staff but also on many nontechnical personnel who carry the blood about the laboratory and to the wards or operating rooms.

One fatality reported to the Los Angeles Center occurred because of a mistake in cross-matching. Two pints of Group AB blood were administered to a Group B patient on whom a cesarean section was performed, resulting in the patient's death one week following the blood transfusions. Most fatal mistakes are really the result of human error, which is a matter of constant anxiety to anyone having the responsibility of running a blood bank.

Because of the dangers associated with blood transfusions, the use of blood should be restricted to circumstances in which there are direct, specific and definite indications.

A number of surgeons have become enthusiastic about giving blood during operation both to prevent possible shock and to replace blood that may be lost. This, combined with the anesthetist's desire to maintain a stable graph of blood pressure and pulse during operation, has in many instances resulted in

an unnecessary use of blood, with increased danger to the patient. All too frequently an anesthetist gives a blood transfusion to a patient undergoing a cholecystectomy, mastectomy, hysterectomy or other operative procedure associated with little blood loss, even though the preoperative blood determinations were within normal limits. Sometimes when the loss of blood at operation is not great the surgeon will sanction a transfusion rather than return blood to the laboratory.

As was pointed out previously, the special hazard of giving blood during anesthesia is that the usual signs of serious transfusion reactions are masked or suppressed. It is important that surgeons and anesthetists evaluate seriously the necessity of administering blood during anesthesia and limit the use of blood to those patients who have excessive loss.

Sometimes preoperatively and frequently postoperatively, a surgeon, following a natural desire to return a patient's blood count to normal as rapidly as possible, will administer blood when a similar result could be brought about with greater safety, although more slowly, by other means.

Overloading the circulation is another example of the misuse of blood. It was reported to the Blood Center that a 69-year-old woman with chronic anemia received six units of blood within 48 hours, resulting in congestive failure. If transfusion is indicated in patients of this type and in the aged, speed of administration should be reduced; and packed cells instead of whole blood may be used to great advantage.[3]

Because of large volume transfusions in major operations and the increased knowledge of electrolytes, the question of citrate intoxication has been raised. Citrate in excessive amounts lowers ionized calcium, which may result in tetany and cardiac dysfunction. Normally one is not too concerned, because of the considerable margin of safety. However, in patients with impaired liver function, citrate intoxication is possible and the administration of 10 cc. of 10 per cent calcium gluconate into another vein for each two bottles of transfused blood is wise.[6]

One of the most serious dangers is that of transmitting hepatitis to the patient. Reports indicate that this may occur in about one of 200 patients receiving transfusions of whole blood and that death may be caused by this factor in about one case in 6,000 transfusions.[2] Generally, the incidence of hepatitis following whole blood transfusion seems to be less than one per cent. This danger is greater, however, following transfusions of plasma[5,6,8] although recent work has demonstrated that the virus of this disease will not survive in liquid plasma stored at room temperature for long periods (six to nine months).[1] For the past five years at the Los Angeles Blood Center, irradiated pooled liquid plasma has been stored in that manner.

During World War II, in one careful follow-up study of 587 wounded soldiers in three Army hospitals, it was found that in 21.9 per cent of those who received blood and plasma, hepatitis with jaundice developed. This was in contrast to an incidence of 3.6 per cent among those who received whole blood only (5.6 units of whole blood per patient—hence the comparatively high incidence).[7]

The danger of virus hepatitis is universal. In Copenhagen in 1951, the incidence of virus hepatitis among 4,687 hospital patients, about one year after their discharge, was 1 per cent among those who had received whole blood transfusions; 3 to 4 per cent among those who had received serum transfusions; and 0.14 per cent among those in the control group. (There is always the possibility that the infection might have resulted from contaminated syringes, needles or blood lancets used in the hospital.)[4]

There are two virus agents concerned in the transmission of hepatitis. The two diseases produced clinically are much alike and from the pathological point of view are almost identical. One has been identified primarily with the clinical and epidemiological syndrome of infectious hepatitis and has an incubation period of approximately 20 to 40 days. The other, which has been associated with the homologous serum hepatitis syndrome, characteristically develops 60 to 150 days after blood transfusion.

Most studies have shown that an attack of one disease confers some immunity to that disease but not to the other. It has been demonstrated that gamma globulin may prevent epidemics of infectious hepatitis when given during the incubation period.

At the Los Angeles Regional Red Cross Blood Center, we have been concerned with the increased number of posttransfusion hepatitis cases—15 cases reported in 1954 and 34 cases in 1955. Only the serious cases are reported to the Center in the monthly reports from hospitals. Actually the incidence is many times as great as the reports would indicate.

Of particular importance is that volunteer donors are carefully screened, and when a donor's blood is implicated in a case of jaundice, a letter is written to the donor explaining the situation and asking if he had understood the original query concerning a history of jaundice. In only one such case was there implication of previous overt hepatitis: Upon review of his medical history the donor mentioned that he had been hospitalized while in the Army with several other patients and that the diagnosis may have been infectious hepatitis, although he was

not jaundiced and was not certain that the illness was hepatitis. However, on the chance that this donor had had infectious hepatitis, we asked him not to donate blood again. As to the cases of the many who have replied stating very definitely that there was no history of jaundice, the obvious conclusion is that there are asymptomatic carriers and that there is as yet no way of eliminating the hazard of virus disease transmission in blood transfusion.

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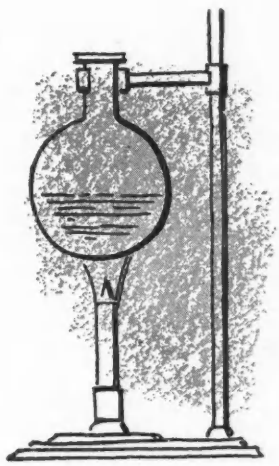

Posterior Surgical Approach to the Rectum

RICHARD A. LOCKWOOD, *M.D.*, and WILLIAM A. TAYLOR, *M.D.*, Beverly Hills

• **A posterior approach to the rectum that has been used by the authors and others recently in treating premalignant lesions at the 8 to 14 cm. level has a number of advantages.**

Previous objections to it have been largely overcome by present-day methods of attaining a sterile operative field and also improvements in techniques of preoperative preparation and postoperative care.

There are several special situations in which this approach may theoretically be of value.

FREQUENTLY in the practice of proctology or general surgery a surgeon is confronted with benign lesions requiring excision at the 8 to 14 cm. level in the rectum. Small pedunculated polyps present no problem since they may be treated adequately through the sigmoidoscope with biopsy forceps, cautery or snare.

Presenting a different problem, however, are the large sessile adenomatous polyps which may be situated on the proximal surface of a mucosal fold or Houston valve and are therefore difficult to treat through the sigmoidoscope. In addition the not uncommon villous or papillary adenoma so frequently gives rise to adenocarcinoma that in the opinion of some observers wide surgical excision is mandatory.[4,7,11,12,14] Only thus may the specimen and adjacent tissue be thoroughly examined to exclude early carcinoma.

These lesions situated at the 8 to 14 cm. level—a notorious no-man's land of surgical approach—are also relatively inaccessible through a laparotomy incision. Confronted with this problem recently, the authors pondered the idea of dealing with these lesions through a posterior rectal approach. After performing the procedure on several occasions with excellent results, we noted that Crowley and Davis[5] recently reported a similar procedure. Since many surgeons may be unaware of this technique, however, for there are only occasional references to it in the literature, we felt that reemphasis of its advantages would be of definite value.

This approach to the rectum was used extensively by Kraske in 1885[1,5,9] as the first step in an operation for rectal carcinoma which is now obsolete—posterior resection. He removed the carcinoma and performed an end to end anastomosis. Sacral colostomy was carried out if anastomosis was impossible.

Hochenegg in 1888[2,8] used the same approach but modified Kraske's procedure by substituting a pull-through or invagination technique to avoid sacral colostomy. At about the same time, Allingham in England further modified the procedure in attempting to retain adequate sphincter control.[6] Although the entire rectum with the internal sphincter was resected for carcinoma, the external sphincter was preserved.

Following these procedures for carcinoma there was about a 90 per cent recurrence rate, and a 70 per cent incidence of fistula formation. Incontinence and an unmanageable anal colostomy were also a frequent result. For these reasons the operations were enthusiastically abandoned when Miles introduced the abdominoperineal resection in 1908.[9,10]

Although portions of these early operations have been revived from time to time in an effort to avoid colostomy, the posterior approach has rarely been mentioned and is almost never used today. Bevan in 1917[3] and Vernon David in 1943[6] reported procedures which enabled the surgeon to remove polyps low in the rectum. Their technique consisted of dividing the sphincter posteriorly and extending the rectal incision toward the coccyx so that the tumor could be grasped with a clamp and prolapsed into the operative field. This procedure was apparently used when adequate exposure could not be obtained by dilatation of the sphincter. It seems doubtful that polyps could easily be removed by this method above 10 to 12 cm.

PREPARATION AND TECHNIQUE

In the procedure as it has been done by the authors, the patient is given a low residue, high protein, high carbohydrate diet preoperatively. Four days before operation catharsis is accomplished with sodium phosphate. Neomycin, 1 gm., and streptomycin, 0.5 gm., both given orally every six hours, are added to the bowel preparation on the second preoperative day. Clear liquids are allowed by mouth the day before operation, and cleansing saline enemas are given at that time and immediately preoperatively.

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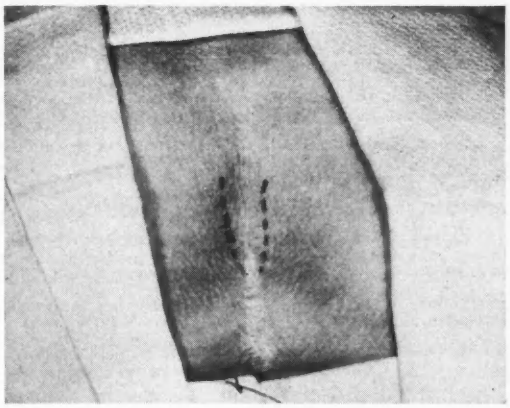

Figure 1.—Draped operative field showing coccyx outlined by dotted line.

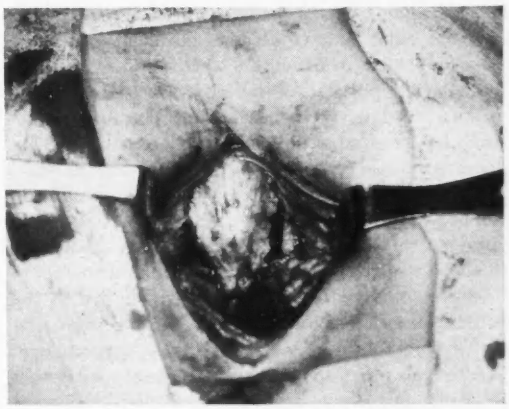

Figure 2.—Skin incision has been made showing coccyx exposed above and levators below.

This regimen renders the colon free of feces. Cultures taken from the rectum at the time of operation have shown no bacterial growth.

The patient is placed in the Kraske position, and the buttocks strapped apart with tape. The lower drape is sutured to the posterior perianal skin to exclude the anal orifice from the operative field. A longitudinal midline skin incision is made from the fifth sacral vertebra down to the proximal edge of the external anal sphincter. If more room is required inferiorly, the skin incision may be extended to one side of the anus into the buttock, avoiding the sphincter.

The coccyx is dissected free of surrounding structures and readily disarticulated and removed. It is invariably necessary to place a suture-ligature about the middle sacral artery. An additional two or more centimeters of exposure of the rectum may be obtained by removing the fifth sacral vertebra without danger of injury to the anterior sacral nerves.

The levator ani muscles are divided in the midline, exposing the posterior rectal wall for the full length of the incision. The rectum is then longitudinally incised, and the polyp grasped and prolapsed through the proctotomy wound. Allowing at least one centimeter margin below the polyp, the lesion is excised and the resulting defect in the rectal wall closed with a double layer of continuous chromic catgut. The divided levator ani muscles are loosely approximated in the midline. The subcutaneous tissue is closed with catgut, and the skin with vertical mattress sutures of No. 32 steel wire. A Penrose drain, brought out through the lower pole of the wound, is cut in the shape of a Y, allowing a limb to lie on each side of the rectum away from the bowel suture line.

Postoperatively the patients are given a low residue diet, and streptomycin is continued for two days. The first bowel movement usually occurs on

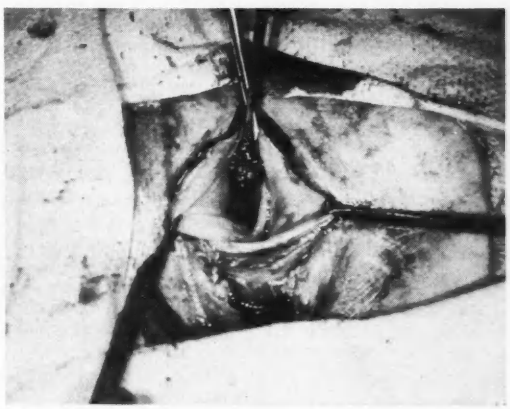

Figure 3.—The rectal polyp is prolapsed through the posterior proctotomy wound.

the third or fourth day, and the drain is removed on the fourth day. Skin sutures are removed on the sixth or seventh day. Bowel movements are aided by the administration of Metamucil® (psyllium hydrophilic mucilloid with dextrose).

The patients in whom the authors have done this procedure have had minimal postoperative discomfort. There has been no wound infection or fistula formation. Discharge of serous fluid through the drain wound stops a few days after the drain has been removed. None of the patients had difficulty with postoperative reflex spasm of the anal sphincter.

DISCUSSION

It is of interest to reconsider in the light of current surgical knowledge the reasons the original posterior approach procedures were abandoned.

With a recurrence rate of 90 per cent the operations were obviously inadequate in the treatment of

cancer. They have no place as curative procedures. It seems reasonable to assume, however, that in an occasional case in which only palliation is possible, by using the posterior approach to facilitate anastomosis a bleeding or partially obstructing tumor mass could be removed without resorting to palliative abdominoperineal resection.

The original operations carried a 70 per cent incidence of fistula formation, but with current techniques of bowel preparation and the use of a drain in the wound, infection should occur infrequently. Infection did not occur in the cases in which the authors used the procedure or in those reported by David who routinely sectioned the anal sphincters.

Although incontinence was a frequent problem in the early operations for cancer, a simple incision and closure of the bowel wall with or without dividing the sphincter does not influence continence. It seems feasible to use this approach in performing the anastomosis in pull-through operations. This method should help to preserve continence, since it eliminates the eversion of the rectal stump and preserves the small nerve filaments to this portion of the rectum. Turrell[13] suggested that if the lower six to seven centimeters of rectum is unmolested, continence should be retained, although the absence of the rectal ampulla may result in the loss of warning of impending defecation. It is obvious, however, that a cancer operation should never be compromised to save sphincter function.

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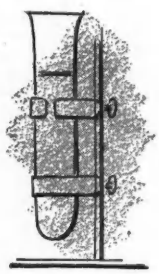

Primary Squamous Cell Carcinoma of the False Vocal Cord

WALTER P. WORK, M.D., San Francisco

• **Primary squamous cell carcinoma of the false vocal cord may arise on the surface mucosa or may arise beneath it and continue to grow deeply, presenting only a smooth tumescence of the area. These lesions may not cause hoarseness until late in the course of development. Diagnosis of submucosal primary lesions may present difficulty.**

Widefield laryngectomy is recommended for small primary lesions of the surface mucosa of the false vocal cord. Such lesions do not show edema of the tissues or deep ulceration and do not cause limitation of motion of the false or true vocal cords.

For advanced lesions of the false vocal cord which arise on the surface mucosa and cause edema, ulceration and limitation of motion without enlargement of cervical nodes, widefield laryngectomy and elective block dissection of the neck should be done at the primary operation. Patients with such a primary lesion and metastasis to cervical lymph nodes, which are resectable, should be treated in a like manner.

Patients with submucosal primary squamous cell carcinoma of the false vocal cord should be treated with widefield laryngectomy and block dissection of the neck, whether or not palpable resectable lymph nodes are noted in the neck. Apparently these lesions metastasize early and widely.

IN THE AUTHOR'S experience with cancer of the larynx, primary squamous cell carcinoma of the false vocal cord occurs in about three per cent of the cases examined. The false vocal cord is involved much more frequently by carcinomas that arise in close anatomical relation to it. For example, carcinoma arising near the petiolus of the epiglottis will often invade the false vocal cord directly. Further, carcinomas arising in the area of the aryepiglottic fold, over the arytenoid area and those arising in the ventricle may involve the false vocal cords by direct extension. The difficulty in assigning primary lesions to various anatomical locations in the larynx is well known and this is particularly true when the lesions are seen late in the course of the disease. The present discussion will be limited to squamous cell carcinomas whose primary site of origin is the false vocal cord as determined clinically as well as by gross and microscopic pathological examinations. The discussion will further be concerned with those lesions that arise primarily on the surface mucous membrane and with those that arise submucosally.

DIAGNOSIS

If the primary lesion of the false vocal cord is mucosal in origin, there is usually no difficulty in diagnosis either by indirect examination and biopsy or by direct examination and biopsy. Lesions that arise submucosally and continue to grow submucosally within the substance of the false vocal cord present difficulties in diagnosis. By their nature of growth there is no surface lesion and clinically the false vocal cord shows only evidence of tumescence upon either indirect or direct examination. The author's experience, submucosal deep biopsy and needle biopsy of the false vocal cord have been unsatisfactory. Tomography has given some indication of a swelling or mass in the region of the false vocal cord, but this method can be considered only an aid in diagnosis. Absolute diagnosis has been made by thyrotomy, excision of tissue under direct vision, and microscopic frozen section examination. When thyrotomy is attempted for diagnosis in submucosal false vocal cord cancer, the surgical amphitheater should be set up so that definitive operation can be carried out at that time if biopsy is positive for cancer.

Presented before the Section on Ear, Nose and Throat at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

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REPORTS OF CASES

I. *Early Surface Mucosal Lesions Arising on the False Vocal Cord*

CASE 1. A man 56 years of age, first observed January 21, 1953, had an indefinite history of hoarseness of many months' duration. Indirect examination by a mirror showed a fungating lesion arising on the anterior portion of the right false vocal cord. There was no limitation of motion of either the true or false vocal cords. Direct laryngoscopic examination confirmed these findings. Microscopic examination of tissue taken from the lesion showed squamous cell carcinoma. No palpable lymph nodes were present in the neck. On January 26, 1953, widefield laryngectomy was performed. There was no recurrence some three years later.

II. *Advanced and Far Advanced Surface Mucosal Lesions of the False Vocal Cord*

CASE 2. A man aged 59 years was first observed January 8, 1951, with complaint of hoarseness and soreness of the throat for a period of at least two months. Indirect mirror examination of the larynx showed a fungating lesion arising from the anterior half of the left false vocal cord, extending anteriorly to the petiolus of the epiglottis. No palpable lymph nodes were present in the neck. Direct examination showed the lesion extending toward the ventricle, and toward the area of the epiglottic fold with beginning limitation of motion of the false vocal cord. The true vocal cord moved freely. Squamous cell carcinoma was proved by microscopic examination. On January 22, 1951, widefield laryngectomy was done. Enlargement of nodes in the left side of the neck was noted three months later. On May 24, 1951, a left radical neck dissection was done. From June 11, 1951, to July 13, 1951, the patient received a tumor dose of x-ray therapy to the right and left sides of the neck. In January 1953, enlarged firm nodes appeared in the right side of the neck and a right radical neck dissection was done. The patient died of cancer in December 1953.

CASE 3. A 62-year-old man, first observed April 26, 1950, complained of hoarseness for 11 months. No lymph nodes were palpable in the neck. The laryngeal airway was partially occluded, so tracheotomy was done. A biopsy done at the same time showed squamous cell carcinoma arising on the anterior portion of the right false vocal cord. In addition, there was pronounced edema, ulceration, and limitation of motion of this side of the larynx (Figure 1). Firm lymph nodes appeared on the right side of the neck and on November 21, 1950, a right radical neck dissection was done and postoperative x-ray therapy was given. The lesion progressed and on March 14, 1951, the patient died of rupture of the right common carotid artery.

CASE 4. A man 59 years of age was first seen on May 25, 1954, because of hoarseness for three months and pain under the right side of the lower jaw. Indirect mirror examination of the larynx showed a large fungating lesion involving the area of the right false vocal cord. The lesion was ulcerated and there was limitation of motion of the right side of the larynx. On May 27, 1954, direct laryngoscopic examination confirmed these findings and in addition showed the lesion to extend toward the petiolus of the epiglottis, toward the aryepiglottic fold and showed it to be overhanging the true vocal cord. On June 1, 1954, widefield laryngectomy and right block dissection of the neck were carried out in continuity as a one-stage procedure (Figure 2). Although no lymph nodes were palpable in the patient's neck, one of 22 lymph nodes from the jugular chain examined microscopically showed metastatic cancer. The patient's postoperative course was uneventful and he was living and well at the time of last report, 23 months following operation.

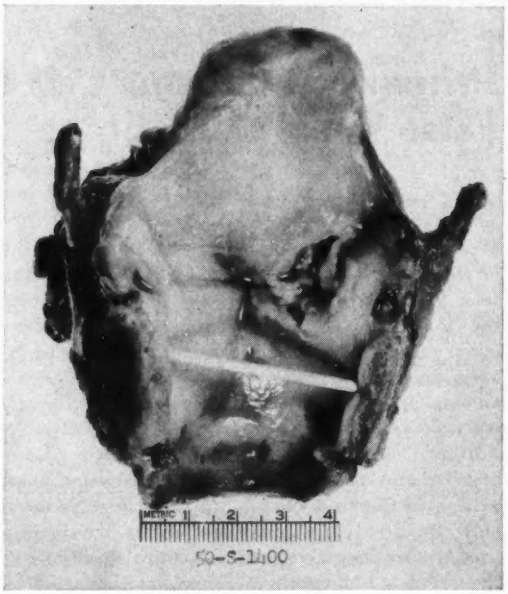

Figure 1

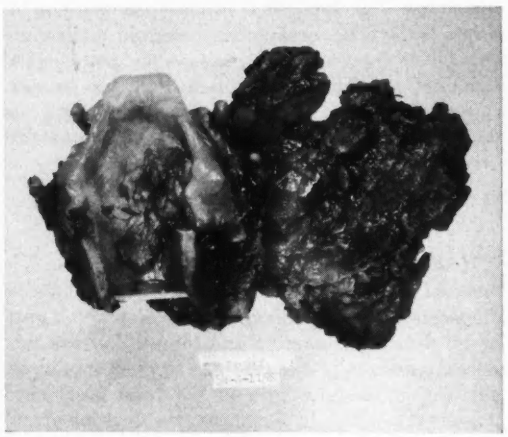

Figure 2

III. *Primary Submucosal Squamous Cell Carcinoma of the False Vocal Cord*

CASE 5. A man 47 years of age was first observed May 7, 1948, with complaint of hoarseness for two months. Indirect mirror examination of the larynx showed a round symmetrical swelling of the left false vocal cord. Further, there was a group of firm lymph nodes palpable in the deep cervical digastric area. They were freely movable. On May 18 and again on June 22, 1948, direct laryngoscopic examination confirmed the conditions noted upon mirror examination. Biopsy specimens were not obtained in either instance since there was no surface lesion. On July 8, 1948, direct laryngoscopy was

again done and material was aspirated from the area but diagnosis was not made from examination of it. On July 15, 1948, tissue was excised from the lymph nodes in the neck and they proved to have been invaded by squamous cell carcinoma. On July 23, 1948, no abnormality was noted in biopsy material from the nasopharynx. On July 28, 1948, thyrotomy was done. The false vocal cord on the left side was exposed and a specimen of deep submucosal tissue was excised. By using frozen section technique, squamous cell carcinoma was found in this specimen. On the same date a widefield laryngectomy and left radical neck dissection were performed. The patient's postoperative course was uneventful. In July 1950, a small pharyngeal lesion developed on the right side near the scarred area of excision. This proved to be squamous cell carcinoma again. On July 24, 1950, a right partial pharyngectomy and right radical neck dissection were done. The recurrence of cancer was found on the right side of the pharynx in the area where the epiglottis had been removed (former preepiglottic space area). The patient again made uneventful recovery. In November 1951, he had a severe fall, striking the back of his head. A subdural hematoma developed and in spite of treatment, including trephinations, the patient died on February 16, 1952. Postmortem examination showed no evidence of cancer.

CASE 6. A 57-year-old man was first seen in December 1949, with complaint of hoarseness for one year. Indirect mirror examination of the larynx showed a diffuse swelling of the left false vocal cord with no surface mucosal lesion. On December 29, 1949, direct laryngoscopy and biopsy were done. The biopsy specimen was unsatisfactory. On January 3, 1950, thyrotomy was done and a deep biopsy specimen showed squamous cell carcinoma. Definitive operation was not done then because preparations had not been made for it. On January 31, 1950, a widefield laryngectomy was performed. Following laryngectomy the patient was transferred elsewhere. On January 19, 1952, at the Veterans Administration Hospital in Los Angeles an attempt was made to do a block dissection of the left side of the neck because of metastatic carcinoma. Since all the involved lymph glands and cancer could not be removed from the neck, radon seeds were implanted into the area. The patient died February 18, 1953, of metastatic cancer to both lungs and to the lymph nodes of the mediastinum.

DISCUSSION OF CASES

Primary squamous cell carcinoma of the false vocal cord may arise either on the surface mucosa or beneath the surface mucosa.

If the diagnosis of carcinoma can be made early in the course of the disease in small surface lesions, and adequate surgical treatment instituted, it appears that the patient has the best chance for survival. However, since hoarseness is a relatively late symptom, the patient does not usually appear for initial examination until the disease is far advanced. This was true in five of the six cases here reported.

In the three patients with advanced mucosal lesions (Cases 2, 3, and 4), there were no lymph nodes palpable in the neck at the time of original examination. In Cases 2 and 3, palpable nodes developed subsequent to widefield laryngectomy and the patient in Case 4 was found to have involvement of one lymph node when the nodes from the surgical specimen were sectioned microscopically. In this group only the patient in Case 4 was living and well at last report—23 months after widefield laryngectomy and elective block dissection.

It appears that elective block dissections should have been done in Cases 2 and 3 at the time of widefield laryngectomy. In fact, the patient in Case 2 had bilateral cervical lymph node metastasis during the course of his illness. It has been the author's experience that when lymph nodes declare themselves in the neck following widefield laryngectomy, the prognosis for arresting the disease is extremely poor. It appears the best chance for arrest of the disease in the advanced lesions is to combine elective block dissection of the neck with widefield laryngectomy at the original operation. In addition to early lymphatic spread, these mucosal false cord lesions may spread directly to the musculature of the false cord, to the ventricle, to the arytenoid area, to the aryepiglottic fold, to the petiolus of the epiglottis and preepiglottic space, and may involve thyroid and epiglottic cartilages.

Submucosal primary lesions of the false vocal cord present difficulties in diagnosis, as noted in Cases 5 and 6. Several attempts at biopsy failed and the diagnosis of cancer was made in each patient only after thyrotomy and biopsy under direct vision. Cervical lymph node invasion can be early. In fact in Case 5, metastasis to the deep jugular lymph nodes was present at the time of initial examination. Further, direct extension of these lesions is likely to occur to muscle, thyroid cartilage and the preepiglottic space. The two patients in this group had an indefinite history of hoarseness for many months before initial examination. Radical operation in Case 5 arrested the disease for four years. However, in Case 6 operation and irradiation did not control the cancer.

During some period of their illnesses, lymph node involvement was present in five of the six patients. It appears that primary lesions arising either on the surface mucosa or beneath it tend to metastasize readily to the cervical lymph nodes and that the metastasis may be unilateral or bilateral. Such metastasis denotes poor prognosis for arrest of the cancer.

384 Post Street, San Francisco 8.

CASE REPORTS

Cobalt Tumor of the Thyroid Gland

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VICTOR M. KOSTAINSEK, M.D., and
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COBALT is reported useful in therapy of certain kinds of anemia.[1, 2, 4, 9, 13, 17, 18] It may cause nausea, vomiting and loose stools, not severe enough to contraindicate its use. But goitrogenic effect, recently reported by Gross and Kriss with Spaet[6] and with Carnes[12] may be more serious. Pronounced hyperplasia of the thyroid gland was noted histologically. Clinically hypothyroidism was observed in some cases along with lowered metabolic rate and lessened iodine uptake. The goitrogenic effect has since been observed by others.[3, 10, 14] Even so, some manufacturers of hemotinics continue to recommend routine use of cobalt including during the latter part of gestation, without mentioning this goitrogenic effect.

Recently the authors removed a thyroid tumor (hyperplasia) which developed during iron and cobalt therapy in one of a pair of 8-month-old twins.

REPORT OF A CASE

In *Twin A*, a girl eight months old, a lump developed in the thyroid isthmus after two months of therapy for microcytic anemia with regular daily use of a cobalt-iron mixture (Roncovite®). The amount used daily was 1.2 ml., carrying about 20 mg. of cobalt. The hemoglobin value increased from 50 per cent up to 80 per cent during therapy but the mother had begun to notice the baby had difficulty with eating. In ten days a lump in the neck increased from about 2 cm. to 3 cm. in diameter and the patient was able to swallow only a few sips of liquid a day. Lugol's solution, 3 minims a day, did not make the mass recede.

In *Twin B*, a sister of Twin A, similar anemia had developed; the same therapy had been given and definite thyroid enlargement developed—diffuse but not great, and without nodule.

The twins were born six weeks prematurely. The mother had been seeking pregnancy for nine years. Conception occurred two months after diagnosis of hypothyroidism and the beginning of administration of desiccated thyroid, 60 mg. a day. Twin B, the first born, presented normally, weighed 4 pounds 6 ounces and was always the more robust. Twin A weighed 3 pounds 8 ounces and was a breech presentation. She had frequent respiratory infections, for which antibiotics had been given. The twins both have type 0, Rh (C De/Ce).

Upon examination, Twin A was observed to be undernourished (weight 15½ pounds), listless and sallow. The mass at the midline of the neck was rather firm. No other thyroid tissue could be felt. Offered water, the patient made rather exaggerated gulping motions, but swallowed only very small amounts. Breathing appeared unimpeded, although the mother had thought it noisy the night before.

Operation was done to remove the mass, which proved to be mostly thyroid isthmus. There was considerable tracheal compression. Sections taken from adjacent parts of the right and left lobes showed the same structure as the main mass—extreme hyperplasia throughout, and in some areas so great as to represent a papillary adenoma. No colloid was seen in any sections. The entire thyroid gland appeared about four times normal size, and it was extremely vascular. The stroma was dense in places, delicate in others (Figures 1 and 2).

Two days after operation, therapy with desiccated thyroid was started, 6.0 mg. a day, and administration of Lugol's solution was resumed. The patient did well. A month later, without consulting a physician, the mother began to give Twin A the cobalt-iron medication again, at the same time continuing the Lugol's solution and desiccated thyroid. For a while the baby continued to do well, but after a few weeks was taken to the family physician because of rapid thyroid enlargement, this time of the right lobe. She was again having trouble with eating. The tumor was spherical, firm, about 3 cm. in diameter. The patient had lost weight and become listless again.

Because of the similarity to the reported cases of thyroid hyperplasia during cobalt administration, the present cases were discussed with Dr. Ruth Gross,[5] who also thought cobalt might be the cause. All medication was stopped and five days later the tumor was definitely smaller. In two weeks it was almost gone, and the patient was eating well again. Observed for two months after discontinuance of cobalt, she seemed normal. A recent test with I^{131} showed 32 per cent uptake in the neck at 24 hours.

Submitted January 4, 1956.

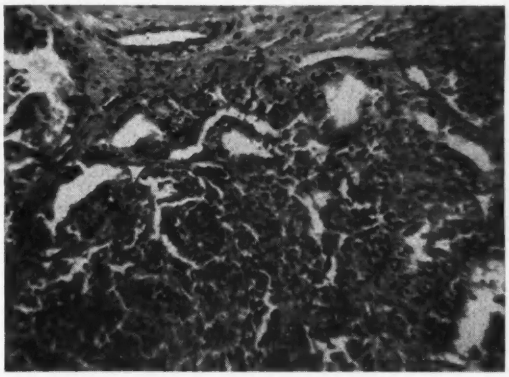

Figure 1.—Histological section (×100) of thyroid gland (Twin A) showing pronounced hyperplasia and absence of colloid.

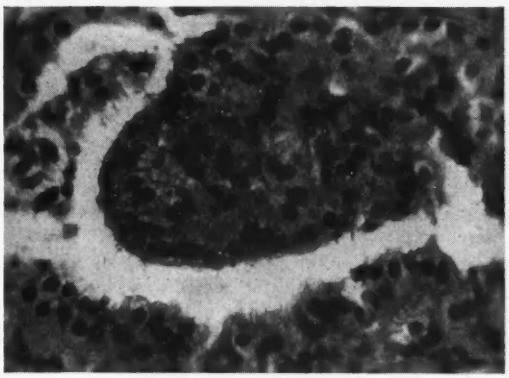

Figure 2.—High power photomicrograph (×400) of same specimen as shown in Figure 1.

Twin B had her medication stopped at the same time and there was a similar total regression of the (slight) thyroid enlargement, and a normal uptake of I^{131} (30 per cent at 24 hours) a month after discontinuance of therapy.

COMMENT

Thyroid tumor developing in association with cobalt administration has been reported infrequently, and only in children. Kriss, Carnes and Gross[12] reviewed autopsy material and noted one case in an adult. However, thyroid hyperplasia (from whatever cause) can cause death by suffocation. Klink[11] has reported ten such cases, five of them in infants that had received cobalt.

In the cases reported[6, 12] the tumors developed over a number of weeks (as in the case herein) and diminution in iodine uptake occurred at the same time. (This could not be tested in the patients herein reported upon, because of the use of Lugol's solution.) In the other reported cases, the tumors regressed after discontinuance of cobalt therapy, as happened in the patients in the present case.

Anemia was present in the patients here reported upon, and this was true of the other cases in which a goitrogenic effect was reported. Jaimet and Thode[8] reported upon 18 children who received cobalt without development of thyroid hyperplasia or decrease in I^{131} uptake. However—and perhaps this is significant—these children did not have anemia. One wonders if the susceptibility to the goitrogenic effect of cobalt is in some way related to certain types of anemia. Even though Holly[7] reported upon a series of 78 women receiving cobalt during gestation without enlargement of the thyroid gland and without abnormality of the baby, the authors feel that not enough is known as yet of the effect of cobalt on the fetal thyroid gland to warrant recommending its use in pregnant women.

CONCLUSION

Cobalt by mouth can cause dangerous hyperplasia of the thyroid gland, at least in infants and children. This can occur even during medication with thyroid and iodine. It is not certain what anemia has to do with the individual susceptibility to this effect. The thyroid enlargement regresses after cessation of cobalt medication. Thyroid function may then be found clinically normal, with normal uptake of iodine. The hazards should be carefully considered before cobalt is given to infants, children or pregnant women.

SUMMARY

Twin sisters eight months old had thyroid enlargement while receiving iron-cobalt medication (Roncovite). The enlargement was a single nodule in one, and operation was done to relieve obstruction to swallowing. A second tumor appeared in a few weeks on resumption of the use of Roncovite, although the patient was receiving Lugol's solution and desiccated thyroid at the time. This disappeared without operation after all medication was stopped. The diffuse thyroid enlargement in the other twin also disappeared after discontinuance of medication. Neither twin appeared clinically hypothyroid. Both had normal uptake of I^{131} in the neck when last observed.

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Acute Urinary Retention in Pregnancy

Report of a Case

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INABILITY OF A PATIENT to evacuate the bladder adequately during pregnancy has been reported only in the situation of a retroverted uterus tightly wedged between the sacrum and pubis in such a manner that the uterine cervix forms a point of occluding pressure against the urethra and bladder neck. This complication of pregnancy has undoubtedly occurred many more times than the rather small number of reported instances in the medical literature would indicate. Nevertheless it is important to report a new instance of the condition because of the acute distress it causes, and for the light that can be cast on methods of treatment. Further, the fact that the condition might be confused with an abdominal condition requiring surgical intervention warrants the reporting of an additional case.

In the management of this problem, success has been reported with the use of two conservative procedures. Replacement of the uterus in the anterior position, with or without the subsequent use of a pessary, resulted in success without interruption of pregnancy in seven patients reported upon by several observers.[1,2,3]

In the present case, the acute emergency was abated without damage to the fetus, solely by vesical decompression and allowing the catheter to remain in place until the uterus spontaneously assumed the anteverted and elevated position as gestation progressed.

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Submitted February 10, 1956.

REPORT OF A CASE

The patient, a 28-year-old white woman, was first observed in the first trimester of pregnancy. She complained of severe, dull, cramping pain in the lower abdomen of 12 hours' duration and said she had not passed urine for some 12 to 18 hours. She had had an appendectomy some ten years previously. The patient had two children who were delivered without untoward difficulty after normal pregnancy, and she had had no abortions or premature terminations of pregnancy.

The first day of the last menstrual flow was April 23, 1954. The patient was 5 feet 2 inches tall and weighed 132 pounds. The body temperature was 99.0° F. The radial artery pulse rate was 86 per minute and the blood pressure was 120/70 mm. of mercury.

There was a cystocele and rectocele of minimal degree present. The uterine cervix was blue, and on it was an area of erosion. The uterus was retroverted and enlarged to the size consistent with three months' gestation. The bladder was greatly distended and tender.

A No. 16 (French calibration) catheter with a Foley type balloon of 5 cc. capacity was inserted into the bladder. In the succeeding few minutes 1,600 cc. of urine was drained from the bladder. The catheter balloon was then expanded with water, and the catheter was left in the bladder.

Upon examination of the pelvic organs it was observed that the uterus was retroverted and incarcerated in the pelvis. No attempt was made to replace the uterus. Sulfasoxizole, 0.5 gm. three times daily, was prescribed. Two weeks later there was a small amount of bleeding, apparently of uterine origin, but it ceased spontaneously. At that time the uterus was of the size consistent with three and a half months' gestation. Twenty-three days after the onset of the acute urinary retention the patient reported that simultaneously the catheter was extruded spontaneously and "something moved" and the abdomen felt "different." Upon examination, the uterus was observed to be of a size consistent with four to four and a half months' gestation, and it was completely out of the cul de sac of Douglas and was anteverted.

There was no further difficulty with the pregnancy, and on February 3, 1955, the patient was delivered of a normal baby.

DISCUSSION

Burdon and co-workers[1] noted that earlier instances of this disturbance of pregnancy were recorded in 1877 by Smellie and in 1912 by Crabtree. Burdon reported the case of a primipara 36 years of age in which successful treatment consisted of elevating the uterus and supporting it with a pessary.

During gestation the capacity of the bladder increases and the tonicity decreases. When mechanical pressure is exerted on the urethra and bladder neck, acute urinary retention occurs. Seidner and coworkers[2] expressed the belief this happens fairly frequently. They noted the five such attacks in gravid women, and in none of those cases were there previous symptoms referable to the urinary tract. In all the bladder was palpated as a clearly rounded mass from which the uterus was distinctly separate. The uterine cervix was high under the symphysis pubis and was pressed against the neck of the bladder. Spring and Hymes[3] conjectured that the condition might come about from eccentric hypertrophy in which the anterior wall distends more rapidly than the posterior wall, drawing the organ upward. They reported successful treatment of the condition in a 29-year-old multipara by decompression of the bladder and manual replacement of the uterus.

The usual course in pregnancy when the uterus is retroverted and incarcerated is spontaneous elevation of the organ from the true pelvis. This is brought about by expansion of the uterus until it no longer can be contained within its limited space. This usually presents no problem even in the more severe cases of retroversion where iatrogenic efforts are of no assistance, such as severe binding inflammatory adhesions and endometriosis. This consideration being held tenable, no other course than continuous vesical decompression was considered in the case here reported, although elevation of the uterus has been reported effective in other cases. The use of undue force in elevation of an incarcerated uterus could lead to abortion.

SUMMARY

Acute urinary retention was caused by pressure of the cervix of a retroverted, gravid uterus. The condition was successfully treated by placement of a retention catheter in the bladder until the uterus spontaneously elevated itself out of the true pelvis.

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Fractured Styloid Process of the Temporal Bone

Report of a Case

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RARELY, during operation for the removal of the palatine tonsils the styloid process is fractured. In the literature are several reports of symptoms arising, following tonsillectomy, from an elongated styloid process. Fracture of a styloid process of normal length produces similar complaints. The symptom complex described resembles that of glossopharyngeal neuralgia. Chief complaints include painful swallowing and a persistent pain in the palatine tonsil area, radiating to the ear, to the same side of the face, to the clavicle and the shoulder and sometimes into the chest. Physicians may do well to keep this condition in mind, for the vagueness of the complaints is such as to turn suspicion towards psychoneurosis.

The following case is reported because a number of physicians, including several otolaryngologists, examined and treated the patient but apparently were unaware of the underlying pathologic condition.

A white male bus driver, 35 years of age, was first observed by one of the authors on February 10, 1955, with complaint of persistent pain in the throat that had begun within an hour following tonsillectomy done June 8, 1954. While yet in the hospital, he noted pain in the right side of the throat and on the right side of the face. He said his right ear was painful, had "a plugged feeling." The pain radiated to the right side of the neck and the right shoulder.

The patient said that ever since the operation he slept poorly because he always had the feeling that something was left within the right tonsil area. He had seen several general physicians, several otolaryngologists, two neurosurgeons and a psychiatrist. Three of these physicians had performed a total of five additional operations on the right side of his throat. The operations consisted of removal of lymphoid tissue on the surface of the tongue and removal of small islands of lymphoid tissue within the tonsillar fossa. Operations gave relief for approximately two days but always the symptoms recurred.

The patient, when examined was trembling and of anxious mien. Retraction of the right eardrum and prominence of the short process of the malleus were noted. The eardrum was intact with no scarring and no evidence of infection. The left eardrum was normal, with all landmarks visible. There was a good airway through the nose. Within the throat the tonsils were completely enucleated, and no lymphoid tissue was visible within the fossae. The patient complained of tenderness when a tongue depressor was pressed against the right side of the tongue posteriorly. No abnormality was noted on

Submitted February 10, 1956.

mirror examination of the postnasal space. Upon indirect laryngoscopy the vocal cords were observed to move equally and no lesions were seen. An audiogram demonstrated an average hearing loss in the right ear of 10 decibels within the conversational range. The impairment was of conduction type. In the left ear all tones were heard above the zero base level. There was considerable loss of hearing in the frequencies above the 4,000 per second, worse within the left ear.

Because of the anxiety of the patient and the seeming exaggeration of symptoms, he was referred to a psychiatrist (W.G.B.). The psychiatrist, after talking with the patient for two hours, felt that although he was psychoneurotic he had organic pain that was not amenable to psychiatric therapy. Therefore he was referred back (to M.W.S.) on March 16, 1955. The patient persistently complained of the same symptoms as before. At this visit, hyperemia of the vessels along the malleus of the right eardrum was noted. Procaine, 1 cc., was injected within the tender area and the patient was not certain he had relief immediately. At the following visit two days later, he said that the pain had disappeared for approximately two hours and that the pain then was less but still present in the same location. He returned March 28, 1955, stating that the pain was severe again and that he was thoroughly discouraged.

He was referred to a roentgenologist for x-rays of the styloid process. The report was as follows: "The right and left styloid process are of equal length. Both are 2.3 centimeters in length (uncorrected magnification), but the right styloid process shows a discontinuity in its uppermost part with the temporal bone so that one may be reasonably sure it has been fractured at this site in the past without subsequent bony union" (see Figure 1).

On April 19, 1955, with the patient under general anesthesia an incision was made in the right tonsillar fossa and the styloid process was noted to be freely movable within the fossa, confirming the x-ray report. It was removed. After operation the patient said that the right ear still felt plugged and that his throat was sore and he had some pain in the chest. However, on May 4, 1955, he said he was much better and had returned to work. From then on he was asymptomatic.

* * *

Failure to recognize the symptom complex of a fractured styloid process in this patient caused considerable needless therapy and pain.

The styloid process is a slender cylindrical bone fused with the temporal bone anterior to the stylomastoid foramen. It consists of a basal segment, which is hidden by the tympanic plate, and a longer segment whose tip is continuous with the stylohyoid ligament. The ligament may become ossified, giving rise to an elongated process capable of provoking symptoms of a glossopharyngeal neuralgia.

Muscle attachments to the styloid process consist of the stylopharyngeus, the stylohyoid and the styloglossus muscles. Pain during deglutition in case of

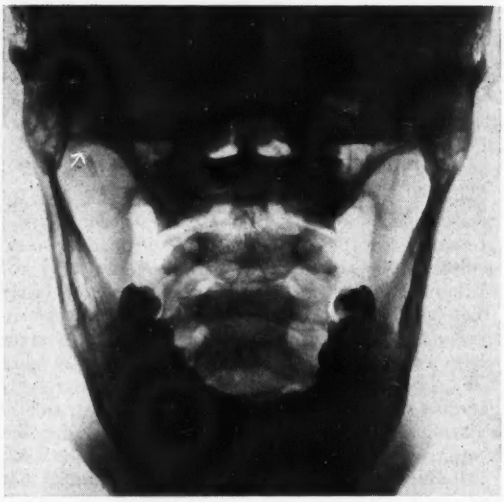

Figure 1.—Discontinuity of uppermost part of right styloid process with temporal bone.

fracture of the process is probably caused by a direct pull exerted by these muscles on the broken bone. Injury to the glossopharyngeal nerve with irritation may occur. Roentgenologically, the line of fracture is very easy to demonstrate.

A disturbance in the swallowing act, especially following tonsillectomy, should make one suspicious of a fractured styloid process. Pain is localized within the tonsil fossa or deep in the neck near the base of the tongue. The pain often radiates to the face and ear on the same side and to the clavicle, shoulder and chest. Pain is worse with swallowing and the patient has a sensation of a foreign body in the throat. In the case herein reported the patient also complained of stuffiness of the ear and a slight loss of hearing (which was confirmed) which completely remitted with the other symptoms. A persistent cough may be present and there may be a choking or a burning sensation in the throat.

Oftentimes the styloid process can be palpated through the tonsillar fossa, with an exaggeration of the symptoms. Treatment is surgical removal, preferably through the intraoral route.

SUMMARY

A patient with fractured styloid process of the temporal bone following tonsillectomy had persistent pain and some loss of hearing. He was examined by numerous physicians who performed five subsequent operations without relief. A psychiatrist said the patient's pain was, indeed, organic. X-ray examination of the styloid process revealed a fracture of the proximal portion. Complete symptomatic relief resulted from intraoral surgical removal of the styloid process.

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California MEDICINE

For information on preparation of manuscript, see advertising page 2

EDITORIAL

Radiation Exposure and Common Sense

REPORTS OF A STUDY on the biological effects of atomic radiation were made public by the National Academy of Sciences at a press conference on June 12, 1956. The conclusions of the six committees studying the problem indicated in general that the peacetime developments of atomic energy and nuclear weapons can proceed without endangering mankind, provided adequate precautions are taken. The study group included committees on genetics, pathology, agriculture, oceanography, meteorology, and disposal of radioactive wastes; it numbered over 100 scientists.[2]

The report of the genetics committee received considerable press attention and revived understandable concern regarding permissible exposure to diagnostic x-rays. It may, therefore, be timely to review some aspects of radiation exposures in diagnostic medical procedures.

For many generations mankind has been exposed to cosmic and gamma rays from natural radioactive sources amounting to lifetime doses of 10 to 15 r, total body. The daily dosage from such sources is perhaps 0.3 mr. (milliroentgens). Many persons wear wrist watches with radioactive material on the dial; when such a watch is worn next to the skin, it has been calculated that a small zone receives, perhaps, 100 mr. per day. Certain types of eyeglasses contain uranium-bearing glass; the ocular dose from such spectacles has been calculated as between 1 and 8 mr. per hour. Despite these facts, it is well known that many citizens reach the ripe age of 90 without evidence of gonadal or bone marrow disturbances. There are regular reports of proud male parentage beyond the age of 90 years. There are no records of serious skin or ocular damage from the natural radioactive hazards above mentioned.

In recent years, x-ray apparatus for medical and industrial uses has become widely distributed. Artificial radioactive materials have been prepared in enormous amounts and are being utilized for experimental purposes by many scientists. The dosage received from such sources varies widely. In order to make even a rough estimate of the dosage received by a given person, the observer must have several facts at his disposal, including the total calculated tissue dose, the size or volume of the area dosed, and the time required to receive that dose. For example, a single dose of 600 r of x- or gamma rays delivered to an area 2 cm. in diameter in one day will not produce any significant skin reaction and will not be associated with deleterious effects when applied over most areas of the body. On the other hand, a single dose of 600 r, delivered to an area 200 cm. in diameter, in one day, would be lethal for some persons and would cause serious radiation sickness in others. In the radiological cure of many types of cancer (cancer of the cervix, for example) it has been repeatedly observed that a tissue dose of 6,000 r to an area approximately 7 cm. in diameter delivered in about 30 days' time is tolerable, and that the adjacent normal tissues can recover in a fashion consistent with long survival. There are thousands of patients on record so cured for periods longer than twenty years.

The maximum permissible total body dose of radiation for persons working with radiation is set at approximately 300 mr. (0.3 r) per week, or about 60 mr. per working day. This dose presupposes irradiation extending over a working lifetime of about 40 years. The permissible dose for exposures to extremities, below the elbows or knees, is some five times the total body dose.

Codes do not limit the amount of radiation that a physician may use in diagnosis or treatment for the good of the patient exposed. Nevertheless, a

conscientious physician will attempt not to injure his patient in diagnostic investigation.

The dose which causes mutations in subsequent generations is not known. However, it is to be noted that there have been over two full generations since the discovery of x-rays and at least one since their fairly widespread use, yet it seems apparent that the mutation rate has not undergone a striking or sudden increase to date. The incidence of leukemia in radiologists is higher than in other physicians, but most radiologists do in fact die of other causes. At one large midwestern medical clinic there are some radiologists in active practice who have performed over 50,000 gastrointestinal fluoroscopic examinations. These careful workers are in good health.

The amounts of radiation received by the patient in diagnostic radiology will vary with the type of examination requested, the skill of the examiner, and the thickness of the patient. Again, one must think in terms of roentgens-time-area. In prolonged fluoroscopic examination of a small baby of average thickness—about 12 cm.—20 r may be delivered to virtually the entire body at one sitting. On the other hand, a comparable examination of a patient 6 feet tall with thickness of 24 cm. will result in a considerably smaller biologic dose, since only a small part of the body will be irradiated and since the thickness of the tissues will result in a smaller amount reaching important deep structures.

The harmful effects of radiation are commonly considered in terms of the genetic effect on the gonads; the thoughtful physician also considers the effects on bone marrow, skin, ocular lens and other structures. He knows that the effect on such tissues is enhanced when examinations are repeated at frequent intervals and especially when the examiner has no idea as to the output of the machines he is using. He also knows that the value of properly done x-ray studies—when indicated—far outweighs any theoretical damage to the patient.

In general, the output of modern diagnostic units can be made quite safe by the use of filters (for example 2 mm. aluminum), cones, a sensible minimum of exposures, and adequate skill in making each exposure so that needless repetition is avoided. It is estimated that in the making of an x-ray film of the pelvis the skin over the scrotum of an adult male receives approximately 1 r, measured in air, when the radiation is filtered through 2 mm. aluminum. The ovary of an average adult female receives perhaps 0.3 r under such conditions.[1]

It has been calculated that in *properly made* anterior examinations of the chest, the skin in the center of the x-ray beam receives about 0.03 r. (However, with the average photoroentgen or minifilm unit, the dose is about eight times as much.) In examinations of the gastrointestinal tract, the total dose received by the skin nearest the tube is often about 14 r; in barium enema examinations, about 5 r; and in gallbladder studies about 6 r. The ovarian doses received in such studies are about 0.8, 1.2 and 0.03 r respectively.

As far as the gonads are concerned, it is advisable to shield them in young persons whenever possible. Leaded rubber, available in radiologists' offices and departments, with a protective value equal to 1.5 mm. of lead, may be utilized. This is applicable especially to male patients, since in females its use might mask the presence of stones, neoplasm or other disturbance for which the examination itself was required.

Considerable radiation is received by many patients as a result of fluoroscopy. Indeed, one physician reported some years ago that in making fluoroscopic examinations of the chest, he discovered that his patients were receiving between 33 and 134 r (on the skin) per fluoroscopy. By increasing the distance between the tube and the table and adding a filter he was able to reduce this output enormously. Sensible advice for fluoroscopists might be summarized as follows:

Use the correct kilovoltage (about 85), low milliamperage (not more than 3), safe tube-table distance (preferably at least 18 inches), a filter of 2 mm. aluminum, and a beam size not over 4 inches square for most of the examination. Such factors will result in a roentgen output at the top of the fluoroscope of about 5 r per minute or less. With skill, dexterity and speed, the patient's skin will frequently receive less than 5 r per examination.

The personal physician is in a key position to reduce unnecessary procedures involving radiation. He can ask himself if x-ray examination is essential for reaching a diagnosis in the patient in question, and, if so, how it can be done most efficiently and with least disturbance to the patient's gonads or bone marrow. When in doubt, he can consult his radiologist and, if necessary, refer to some of the official publications dealing with the important question of radiation protection.[3] Correct diagnosis is the cornerstone of scientific medicine; reasonable and adequate use of diagnostic radiology is an important component of this stone. When an examination is called for, let us continue to have it done skillfully and safely . . . the first time.

L. Henry Garland, M.D.

REFERENCES

1. Kirsch, I. E.: Radiation dangers in diagnostic radiology, J.A.M.A., 158:1420, 1955.

2. National Academy of Sciences, News Report, 6:38, 1956.

3. X-ray Protection, Handbook 60; Radium and Cobalt Protection, Handbook 54, National Bureau of Standards, U. S. Dept. of Commerce, Washington, D. C.

Advertising Standards

IN THE ever-expanding field of pharmaceutical and biological advance, physicians find themselves confronted with a growing number of products offered by a growing number of producers. The physician today is constantly faced with the necessity of knowing just what he is administering or prescribing and just what its merits or dangers may be.

With the expanded competition in the pharmaceutical field has come a new era in pharmaceutical advertising. Each producer is naturally jealous of his own products and anxious to protect his own investment in research and in producing an item on which he is proud to place his own trade name. He is, in short, eager to sell his product once he himself is convinced it is a good one. Through his advertising he tries to transmit some of his enthusiasm to the physicians he can hope will prescribe or use what he produces. Even in his enthusiasm, however, he cannot overlook that his ultimate well-being depends upon the well-being of the patients who use his products. In this his interests are at one with those of physicians. But physicians traditionally pose caution against enthusiasm. They must have a satisfactory appraisal of anything they use in the treatment of a patient. In such circumstances a medical group that will examine medical advertising with a view to providing the greatest benefit and protection to the patient, can do a valuable service both to physicians and to the makers and vendors of products offered for use in the treatment of disease.

The Advertising Committee of the California Medical Association, which reviews the advertising offered for CALIFORNIA MEDICINE, has now done such screening for almost ten years and has established its own set of regulations to govern the acceptability of advertising copy. These regulations require qualitative and quantitative analysis of all products, an ethical advertising policy by the vendor, clean competitive conditions between advertisers and the sound use of quotations from published papers. Quotations taken out of context or not reflecting the true findings of the article quoted are not acceptable.

In addition, the committee's rules state that "sweeping superlatives and unfair comparisons will not be allowed." The rules also provide that "extravagantly worded copy is subject to revision or rejection."

By and large, the establishment of these rules and their strict enforcement by the Advertising Committee have met with a most favorable response from pharmaceutical producers and their advertising agencies. Differences of opinion or of interpretation have arisen in some cases, and a few advertisers have cancelled their schedules completely rather than meet the committee's requirements. However, CALIFORNIA MEDICINE has continued to increase its advertising volume and to present to its readers a carefully selected list of ethical advertisers of efficacious products.

Behind this situation lies a history dating back some 15 years. At that time *California and Western Medicine* was a member of a cooperative group of state medical journals that pooled their selling efforts in one agency which operated out of A.M.A. offices in Chicago. Advertising regulations were set by the A.M.A. on the basis of acceptance of products by the Council on Pharmacy and Chemistry. That Council, in turn, maintained a stringent set of rules, some of which prohibited the acceptance of compounds or mixtures and eliminated consideration of many brand-named products.

Because of such restrictions and the fact that many items which were useful in everyday therapy were eliminated from advertising consideration, officers of the California Medical Association voted to withdraw their journal from the state journal group. Thereafter, advertising sales for the California journal became the responsibility of the Association itself.

The C.M.A. Council immediately authorized the formation of an Advertising Committee. This group, probably never heard of by most C.M.A. members, meets more frequently than any other committee in the Association. For months at a time this committee meets once a week to consider the advertising presented for review.

The work of the Advertising Committee has been increased in the past year because of the discontinuance of the A.M.A. seals of acceptance. When these seals were in use, the local committee could be assured of the earlier investigation of the advertised product and could count upon the accuracy of the A.M.A. findings. Now, the California committee can no longer follow this procedure but must on its own look into all claims made for any item.

Discontinuance of the A.M.A. seals appears to have led some producers or their agencies into more extravagant language and claims in the presentation of their products. The California committee has been quick to recognize the possible dangers in such departures and has insisted on maintaining its own standards rather than abide by those of others. Now and then advertising copy accepted by national, state and county journals and bulletins has been rejected for CALIFORNIA MEDICINE. This is not intended as aspersion on other medical publications but simply to note how conditions may change over a period of years when pharmaceutical advances are everyday occurrences.

In an effort to provide high advertising standards throughout California, the C.M.A. House of Delegates last May adopted a resolution calling on all county societies to observe sound regulations in their own bulletin advertising. A similar resolution, taken to the A.M.A. House of Delegates, met a favorable response there. Thus all state and county publications will soon be put on notice that advertising standards must be maintained at a high level.

The most frequent causes for the Advertising Committee to question copy submitted by advertisers are the absence of a formula and the use of sweeping language in claims for therapeutic efficacy. Over the years the committee has developed an aversion to superlatives and absolutes. At the same time, it recognizes that enthusiasm is the life blood of the advertising business. A fair and sound resolution of this divergence of interests is sought by the committee members.

As to the appearance of qualitative and quantitative formulas, the committee believes that every physician should know what he is prescribing or administering. If there are contraindications to the use of a product for any patient, the physician should have the chance to learn about it before he embarks on therapy which might bring adverse effects. Where a product might present the danger of side effects or other untoward results, the committee wants a caution to appear as part of the advertising promotion.

These requirements are all designed to protect the patient and to assure the physician readers of CALIFORNIA MEDICINE of a sound evaluation of the items presented in the journal's advertising pages.

It takes a great deal of time and effort to study all advertising offered by the ever-growing number of pharmaceutical producers, but the satisfaction gained in assuming a rightful responsibility and discharging it properly should provide an offsetting benefit.

California physicians may well be proud of the thorough and painstaking work of their Advertising Committee and its devoted members. Less immediately, perhaps, but cogently nevertheless, the committee serves the advertiser too: Carefully descriptive advertising helps the physician to help the patient—and it is in help to the patient that the advertiser's fortunes lie.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Transactions of the House of Delegates

Los Angeles, April 29 to May 2, 1956

IN LIEU OF REPORTING the entire transcript of the sessions of the House of Delegates of the California Medical Association in its 1956 Annual Session, the transactions of the House are given here in abstract form.

The resolutions introduced in the House of Delegates are printed in full under three categories: (1) Those adopted as introduced or as amended, (2) those referred to the Council of the Association, and (3) those not adopted. In each instance pertinent comments from the reports of reference committees as adopted by the House of Delegates are appended.

A complete transcript of all proceedings, taken verbatim by a court reporter, is on file in the office of the Association and available for inspection by any member.

* * *

RESOLUTIONS ADOPTED

RESOLUTION No. 1

Introduced by: C.M.A. Council.

Subject: Commendation to Dwight H. Murray, M.D.

WHEREAS, The California Medical Association's own beloved and respected Dr. Dwight H. Murray of Napa, California, currently President-Elect of the American Medical Association, will soon become the President of the American Medical Association; and

WHEREAS, Dr. Murray has attained this high honor because of his life-long devotion to the ever-advancing standard of medical care for the people of his state and nation and the welfare of his confreres; now, therefore, be it

Resolved, That the California Medical Association, duly meeting in convention convey to Dr. Murray our every best wish for a year of successful leadership for American medicine; and be it further

Resolved, That this resolution be suitably printed and presented to our distinguished member, Dr. Dwight H. Murray.

* * *

RESOLUTION No. 2

Introduced by: C.M.A. Council.

Subject: Commendation of Physicians in Flood Areas.

WHEREAS, Residents of many northern California counties suffered severe hardships in the recent floods; and

WHEREAS, Physicians from the stricken areas and the surrounding counties, often at the risk of their own lives, provided 'round the clock medical care; now, therefore, be it

Resolved, That the members of the California Medical Association salute the excellent efforts of their colleagues and nominate them the "Doctors of the Year" for 1956.

(Reference Committee No. 3 noted in its report: The Council wishes to commend physicians in the flood areas for their outstanding work.)

RESOLUTION No. 3

Introduced by: C.M.A. Council.

Subject: California State Alcoholic Rehabilitation Commission.

WHEREAS, The State of California has established a program for the study for control of alcoholism; and

WHEREAS, A state Alcoholic Rehabilitation Commission has been established and given adequate financing; and

WHEREAS, The program of this Commission is now about to be determined and put into operation; now, therefore, be it

Resolved, That the California Medical Association advise the California State Alcoholic Rehabilitation Commission of the Association's belief that alcoholism is a medical problem which demands professional skills and that the Association is prepared to lend every assistance toward the solution of this serious moral, physical and economic problem.

(Reference Committee No. 3 noted in its report: The Council offers assistance to the California State Alcoholic Rehabilitation Commission in its program for the study and control of alcoholism.)

* * *

RESOLUTION No. 4

Introduced by: C.M.A. Council.

Subject: California Physicians' Insurance Corp.

WHEREAS, California Physicians' Insurance Corp. is completely organized and has been authorized by the Insurance Commissioner of the State of California to sell certain policies of indemnity insurance applicable to the costs of medical, surgical and hospital care; and

WHEREAS, Good business practice suggests the wisdom of offering such policies for sale on a statewide basis; now, therefore, be it

Resolved, That the officers and directors of California Physicians' Insurance Corp. be requested to prepare and offer for sale, throughout the area in which the corporation is authorized to write insurance, such policies of indemnity insurance as best serve the needs of the public.

(The C.P.S. Reference Committee noted in its report: Your committee was fortunate in having before it Dr. Hollis L. Carey, chairman of the Commission on Medical Services, who reported that this resolution was unanimously approved by the Commission and subsequently approved by the C.M.A. Council, for the purpose of making available on a state-wide basis policies of indemnity insurance through California Physicians' Insurance Corporation.)

* * *

RESOLUTION No. 5

Introduced by: C.M.A. Council.

Subject: Publication of House of Delegates Proceedings.

WHEREAS, It has been customary for the California Medical Association to publish in full the transcript of each meeting of its House of Delegates; and

WHEREAS, Such publication involves a long period of time to receive, edit and prepare the transcript for publication and to distribute the printed copies of CALIFORNIA MEDICINE; and

WHEREAS, It would be possible to publish with a minimum of delay a digest of the positive actions taken by the House of Delegates, including resolutions adopted and the results of elections; now, therefore, be it

Resolved, That the House of Delegates request the Council to develop a more rapid form of publication of the transactions.

(Reference Committee No. 3 noted in its report: The Council wishes to avoid delay in the publication of the proceedings of the House of Delegates by publishing a digest of the proceedings. To facilitate action by the Council . . . [the committee offered an amendment which was adopted, making the resolution read as above.])

* * *

RESOLUTION No. 7

Introduced by: A. A. Kirchner.

Representing: Los Angeles County.

Subject: Telephone Listings.

WHEREAS, The population of the State of California continues its phenomenal growth; and

WHEREAS, Many of the new residents of the state depend upon the telephone directories for the establishment and maintenance of medical contacts; and

WHEREAS, The present style of listing in the classified telephone directories of medical doctors as "Physicians and Surgeons" is confusing with other licensed doctors in the State of California; and

WHEREAS, For the benefit of the residents of the State of California and for the elimination of confusion, it would be for the best interests of all concerned that those persons holding an M.D. degree be listed as "Doctors of Medicine, M.D."; now, therefore, be it

Resolved, That the California Medical Association, acting through this House of Delegates, request the Pacific Telephone and Telegraph Company and all other allied associations or other telephone systems in the State of California that hereafter they will list all licensed physicians and surgeons holding an unrevoked medical doctor's degree in the various telephone directories, including those known as "classified directories" as "Doctors of Medicine, M.D."; and be it further

Resolved, That the secretary of the California Medical Association be instructed to circulate this

resolution to all telephone companies doing business within the State of California.

(Reference Committee No. 3 noted in its report: This resolution is intended to avoid the confusion of present listings of Doctors of Medicine in the classified sections of telephone directories.)

* * *

RESOLUTION No. 8

Introduced by: Frederic Ewens.

Representing: Southwest Branch, Los Angeles County Medical Association.

Subject: Better Distribution of Salk Vaccine.

WHEREAS, Members of this branch of the Los Angeles County Medical Association have found it impossible to obtain any polio vaccine since January, 1956, from either private sources or from the Public Health Department; and

WHEREAS, Investigation of this problem has revealed that large quantities of the vaccine have been manufactured; and

WHEREAS, Families have been demanding polio vaccine for their children under the age of 15 years; and

WHEREAS, Members of our branch have had families request the vaccine be administered by their private physician rather than a public agency; and

WHEREAS, The public realizes there is a great demand for the use of the vaccine by public agencies but insists that a larger percentage of this vaccine should be made available for private distribution; now, therefore, be it

Resolved, That the California Medical Association's Commission on Public Health and Public Agencies be instructed to take such steps as it is able to assure as equitable and fair local distribution of Salk vaccine as is possible under prevailing conditions of supply, and that it be vigilant in taking such actions as may be required hereunder.

(Reference Committee No. 3 noted in its report: This resolution is intended to correct any existing inequities in the distribution of the Salk vaccine. Your committee feels that it is desirable for this program to be kept on a voluntary basis. It is believed that more rapid action will be forthcoming if this is maintained on a local level.)

* * *

RESOLUTION No. 9

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Lectures on Medical Ethics.

WHEREAS, In these times of increasing pressure, close scrutiny and greater demands, it is of paramount importance that relations between physicians as well as patient-physician relationships reflect the highest credit on the physician and on the medical profession; now, therefore, be it

Resolved, That the American Medical Association be urged to request each medical school to assign a member of the clinical faculty to give at least three hours of formal lectures on medical ethics, professional conduct and manners each year to members of the senior class.

(Reference Committee No. 3 noted in its report: This resolution emphasizes the necessity of training medical students in the principles of ethical practice. Your committee has amended the "resolved" portion of the resolution by inserting the words "conduct and manners" after the word "ethics.")

* * *

RESOLUTION No. 11

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Nursing Education Trends.

WHEREAS, There is an increasing trend toward abandonment of nursing schools by private hospitals of this State; and

WHEREAS, Public schools and colleges will assume an increasing role in the education of nurses; and

WHEREAS, The education and clinical training of nurses is of utmost importance to all persons, hospitals and physicians in our state; now, therefore; be it

Resolved, That the House of Delegates of the California Medical Association instruct the Committee on Medical Education and Hospitals to study these trends and advise those concerned with these problems.

(Reference Committee No. 3 noted in its report: This resolution is concerned with changing trends in nursing education with emphasis on the increasing roles played by public schools and colleges. Your committee is in favor of the intent of this resolution. Inasmuch as a Committee on Medical Education and Hospitals exists, the "resolved" portion has been changed to read . . . [as above].)

* * *

RESOLUTION No. 12

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Advertising Standards.

WHEREAS, A year ago the American Medical Association discontinued the awarding of Council seals and advertising emblems to products and advertising copy which met acceptance requirements; and

WHEREAS, Increased pressure is sometimes being brought in the placing of advertising copy by the advertisers; and

WHEREAS, It is the duty and the prerogative of each medical society to maintain high standards for the acceptance of advertising copy in its official publications; and

WHEREAS, CALIFORNIA MEDICINE has established rules governing the acceptance of advertising copy; now, therefore, be it

Resolved, That the C.M.A. urge county medical societies in California independently to adopt advertising rules similar to the advertising rules for CALIFORNIA MEDICINE, which are based on high standards of quality of product and proven accuracy of the advertising, and be it further

Resolved, That the delegates to the American Medical Association be instructed to inform other state delegations of the necessity of an overall uniform code in medical advertising.

(Reference Committee No. 3 noted in its report: Your committee believes that every effort should be made to maintain the highest level of advertising in all journals and publications.)

* * *

RESOLUTION No. 14

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Provision of Medical Care.

WHEREAS, There are groups of persons in this state, namely the aged, handicapped and disabled, the chronically ill and dependent children, who do not possess the means or health requirements which will allow them to purchase any type of health insurance; and

WHEREAS, It is desirable that the best medical care be provided for these groups and that such care must be financed by the tax moneys of the local community and the state in which such persons reside; and

WHEREAS, Such medical care may be afforded with greater dignity and efficiency by the use of existing hospital facilities in the local community as well as the professional services of physicians in the local area in which such persons reside; and

WHEREAS, Such care may be provided at less cost to the communities by the use of said existing facilities and professional services than by the creation of federal or state hospitals, panels and bureaucracies; now, therefore, be it

Resolved, That California Medical Association study the development of an insurance program which may provide for the health needs of the named groups and persons, which program may be made available to those communities within this state who have not already made provision for such groups or who may in the future request this type of care for the above named groups and persons.

(The C.P.S. Reference Committee noted in its report: Your committee is impressed with the need for meeting the issues of the day with the practical action of encouraging prepaid care for the groups mentioned in the resolution.)

* * *

RESOLUTION No. 15

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Care for Rural Groups.

WHEREAS, There has been concern in nation and state that rural groups and persons have not enjoyed the advantages of health insurance as fully as those in urban areas; and

WHEREAS, It is desirable that such insurance be made available to those groups and persons; now be it

Resolved, That the California Medical Association direct California Physicians' Service and/or California Physicians' Insurance Corp. to continue to prosecute the sale of existing services to such groups and persons and that California Medical Association develop new types of contracts, if needed, to provide for the health insurance needs of those in rural areas.

(The C.P.S. Reference Committee noted in its report: Delegates attending the committee hearing expressed great interest in making C.P.S. or C.P.I.C. coverage available to rural groups and persons. Suggestions were offered as to how physicians might assist C.P.S. in stimulating interest and making known the advantages of such coverage among patients in rural areas. Approval of this resolution will implement attempts to solve a very real problem in providing coverage for a large segment of California's population not now so protected.)

* * *

(Resolutions No. 16, 17, 18 and 19 were combined by Reference Committee No. 3 into one substitute resolution, which was adopted. The original resolutions are shown here so that their intent may be seen. The substitute resolution of the Reference Committee is shown at the conclusion of the item following Resolution No. 19, under the heading "Comments by Reference Committee No. 3.")

RESOLUTION No. 16

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Tissue and Surgical Committees.

WHEREAS, It is recognized professional standards of hospitals may be enhanced by the activities of Tissue and Surgical Committees; and

WHEREAS, Failure to keep detailed records may jeopardize hospital accreditation for intern and resident training; and

WHEREAS, The rules and regulations of the Joint Commission on an accredited hospital may be subject to individual interpretation by the inspectors of hospitals; now, therefore, be it

Resolved, That the Joint Commission on Accreditation of Hospitals be asked to review and revise its rules and regulations regarding Tissue and Surgical Committees to the extent that no inspector by personal interpretation of these rules and regulations may penalize any hospital for failure to keep detailed minutes of the meetings of the Tissue and Surgical Committees.

RESOLUTION No. 17

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Staff Meetings.

WHEREAS, The requirement of the Joint Commission on Accreditation that 75 per cent of each hospital staff attend quarterly or monthly meetings at each hospital of which a physician is a staff member was presumably designed to promote better patient care; and

WHEREAS, As the majority of such hospital meetings are now conducted they do not so serve; and

WHEREAS, The proper place for postgraduate instruction of practicing physicians is at medical society or medical school meetings; and

WHEREAS, Such attendance should be strictly on a voluntary basis; and

WHEREAS, The review of the work of staff members at hospitals can be accomplished more properly and thoroughly in small meetings such as tissue committee, surgical committee and executive committee meetings than where a large number of the staff are present; now, therefore, be it

Resolved, That our delegates to the A.M.A. be instructed to urge the adoption by the Joint Commission on Accreditation of the ruling that attendance at hospital staff meetings should be entirely on a voluntary basis.

RESOLUTION No. 18

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Joint Commission Approval.

WHEREAS, The objectives and general policies of the Council on Medical Education, the Residency Review Committees, the Specialty Board and the Joint Commission on Accreditation are laudable, and they have resulted in improved graduate training and patient care; and

WHEREAS, The application of certain policies appears to have been arbitrary, has been abrupt, and has been disruptive of training programs and hospital operations, and such actions have impaired the acceptance of policies which are recognized to have a constructive purpose which merits acceptance; now, therefore, be it

Resolved, That the aforementioned bodies dealing with approval of intern and residency training programs and hospital accreditation be requested to:

1. Dissociate the approval of education programs from hospital accreditation except that accreditation remain a prerequisite to approval of graduate educational programs;

2. Maintain separate inspectors and inspections to determine the fitness of a hospital for accreditation and educational programs;

3. Withdraw approval or place limitations upon the approval of an existing training program only after discussion with the Chief of the Department involved, the Chief of Staff, the Hospital Administrator, and the Chairman of the Education Committee, if such exists, thereby insuring that these representatives of the hospital staff and administration be informed of the reasons for such contemplated withdrawal or limitation, thus providing an opportunity for correction of deficiencies;

4. Furnish copies of all communications relative to such matters to the Chairman of the Board of Trustees, the Administrator, the Chief of Staff and the Chief of the Department involved.

5. Delay, except in aggravated instances, the withdrawal of approval of a training program for a reasonable period of time, thereby permitting the correction of deficiencies and avoiding the harmful effects upon training programs and hospital operation incurred by abrupt withdrawal of approval.

RESOLUTION No. 19

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Postgraduate Training Requirements.

WHEREAS, The work of the Council on Medical Education and Hospitals and its allied groups has resulted in better training facilities for interns and residents; and

WHEREAS, Some of the requirements of these groups have inadvertently resulted in:

1. An accumulation of house staff at university and government hospitals, thus leaving private hospitals without an adequate house staff, and

2. The private hospitals' opening outpatient clinics which are in direct competition with the private practice of medicine; and

WHEREAS, A young physician should be adequately trained in all the facets of medicine in-

cluding the care of a sufficient number of indigent and private patients; and

WHEREAS, Many private hospitals are not desirous of entering the private practice of medicine; now, therefore, be it

Resolved, That the C.M.A. request the A.M.A. Council on Medical Education and Hospitals and its allied groups to review their requirements for postgraduate training as they apply to private hospitals and the necessity of outpatient clinics in such hospitals which do not desire to enter the private practice of medicine.

(Reference Committee No. 3 noted in its report: Resolution No. 16 deals with rules and regulations regarding tissue and surgical committee meeting minutes. Resolution No. 17 has to do with compulsory attendance at staff meetings. The subject of No. 18 is the inspection of and withdrawal or limiting of approval of training programs. Requirements for postgraduate training in so far as they apply to establishment of outpatient clinics by private hospitals is the subject of resolution No. 19.

Your committee recognizes the possible need for continued change in the rules and regulations of the Joint Commission as set forth in resolutions 16, 17, 18 and 19. We believe, however, that while it is probably within our right as a state medical association to suggest changes, it is more becoming that we point out to the Commission areas or fields which should be further studied and revised rather than make demands for specific changes. We therefore offer this substitute resolution in lieu of resolutions 16, 17, 18 and 19.

Whereas, **The Stover Committee of the A.M.A. is studying the structure and activities of the Joint Commission on Accreditation of Hospitals; now, therefore, be it**

Resolved, **That the delegates of the C.M.A. to the A.M.A. be instructed to emphasize to the Stover Committee the contents of resolutions 16, 17, 18 and 19, copies of which will be provided for the delegates to the A.M.A.)**

* * *

RESOLUTION No. 20

Introduced by: Gerald W. Shaw.

Representing: Los Angeles County.

Subject: Collection of Medical Fees by Hospitals.

WHEREAS, Medicine has traditionally provided free medical care for indigent patients; and

WHEREAS, Medicine has urged the avoidance of such indigencies by voluntary health and accident insurance programs; and

WHEREAS, Certain hospitals have instigated a policy of collecting and retaining fees for medical professional services rendered by staff physicians from clinic patients who maintain health insurance programs; and

WHEREAS, This collection and retention of professional service fees is illegal and morally and ethically indefensible; now, therefore, be it

Resolved, That the California Medical Association is unalterably opposed to the collection and retention of fees for professional services by any hospital, whether it be a profit or nonprofit organization; and be it further

Resolved, That a copy of this resolution be forwarded to the Board of Medical Examiners for their action.

(Reference Committee No. 3 noted in its report: This resolution reemphasizes an existing problem regarding the practice of medicine by hospitals. Since the existing authority of the Medical Practice Act is sufficient to control this practice, we have amended the resolution to read [as above].)

* * *

RESOLUTION No. 21

Introduced by: Robert Helms.

Representing: Long Beach Branch, Los Angeles County Medical Association.

Subject: Indoctrination of Interns and Residents.

WHEREAS, Interns and residents completing their periods of hospital service in California are not always well informed of the advantages of private practice and of the help offered them by the California Medical Association in locating and in beginning a practice; and

WHEREAS, Closed panel systems may at times seem to offer greater remuneration and opportunity; now, therefore, be it

Resolved, That the House of Delegates recommend that each component county medical society having an intern and resident training program within its area appoint a committee for the purpose of informing the interns and residents of the advantages of the private practice of medicine and of the functions and activities of the C.M.A.; and be it further

Resolved, That the facilities of the C.M.A. be made available to assist in this program wherever desired.

(Reference Committee No. 3 noted in its report: This problem which deals with indoctrination of interns and residents deserves consideration.)

* * *

RESOLUTION No. 22

Introduced by: Robert Lee Dennis.

Representing: Santa Clara County.

Subject: Identification of Resolutions.

WHEREAS, A resolution passed by the House of Delegates of the C.M.A. may have been presented to the House of Delegates by a person other than the author of the resolution; and

WHEREAS, A resolution may reflect a very considerable amount of research and work by the author on the subject matter of the resolution; and

WHEREAS, Committees and organizations to which a resolution may finally be submitted for action may be not only desirous of the advice and assistance of the resolution's author but in addition may require papers and reports of the background work of the resolution; now, therefore, be it

Resolved, That henceforth all resolutions presented to the House of Delegates of the C.M.A. will be identified by the name of the author or authors; and be it further

Resolved, That all modifications or amendments of the original resolution passed by the House of Delegates of the C.M.A. will be indicated by appropriately placed footnotes, and that the committee or person responsible for the amendments will be additionally identified.

(Reference Committee No. 3 noted in its report: This resolution is concerned with the loss of original content and author identity of resolutions through various amendments and revisions by committees, both in the C.M.A. and the A.M.A.)

* * *

RESOLUTION No. 26

Introduced by: Lewis T. Bullock.
Representing: Los Angeles County.
Subject: Rabies Control.

WHEREAS, Universal vaccination with chick embryo vaccine has been proven to be a safe, reliable and effective method for the control of rabies in animals; and

WHEREAS, Failure on a local level to utilize available public health measures has led to a rising incidence of rabies, the loss of livestock and a constant hazard to the lives of Californians; and

WHEREAS, Because of rapid and universal transportation rabies can be diminished only by a statewide control program;

Resolved, That the California Medical Association restate its support of universal vaccination of all dogs for the control of rabies; and be it further

Resolved, That copies of this resolution be forwarded to the Governor of California, the appropriate legislative committees and the State Director of Public Health.

(Reference Committee No. 3 noted in its report: This resolution will serve to affirm our support of measures intended to correct the ever increasing problem of rabies control in California.)

* * *

RESOLUTION No. 27

Introduced by: William Kaiser.
Representing: Alameda-Contra Costa County.
Subject: Industrial Accident Fee Schedule.

WHEREAS, The work of the Industrial Accident Fee Committee, under the chairmanship of Dr. Francis J. Cox, during past years has resulted in an improvement of the California Industrial Accident Commission Fee Schedule; and

WHEREAS, This improvement leaves great strides still to be made; now, therefore, be it

Resolved, That the committee be extended the congratulations of this House for their accomplishment; and be it further

Resolved, That the Medical Services Commission be urged to continue their vigorous efforts toward the necessary further improvement of the Industrial Accident Fee Schedule.

(Reference Committee No. 3 in its report: Offered the above resolution as a substitute for the original.)

* * *

RESOLUTION No. 28

Introduced by: William Kaiser.
Representing: Alameda-Contra Costa County.
Subject: Liability in First Aid.

WHEREAS, It is a hardship for doctors of medicine to treat roadside accident cases under present circumstances in which their liability for such treatment is not clear; now, therefore, be it

Resolved, That this House direct the appropriate committees of the California Medical Association to investigate the advisability of legislation clearly outlining and defining the responsibility of a physician who voluntarily treats an accident victim at the scene of an accident.

(Reference Committee No. 3 noted in its report: This problem of liability in first aid is recognized as a serious one which can confront any one of us. Without being aware of any reasonable means of solution, your committee certainly feels the subject is worthy of further consideration. We recommend that it *do pass* and be referred through the Council to the appropriate committee.)

* * *

RESOLUTION No. 29

Introduced by: T. D. Englehorn.
Representing: Monterey County.
Subject: Medical Expert Testimony.

WHEREAS, Medical expert testimony in personal injury lawsuits is becoming increasingly more important in the courts of California and much of the testimony is being presented by practitioners of medicine not qualified as experts in the particular field in which they are testifying; and

WHEREAS, Such testimony is often confusing, conflicting, unintelligent and at times biased, and results only in confusion of both judge and jury; and

WHEREAS, A system for obtaining impartial medical testimony has been established in Minnesota and in New York; now, therefore, be it

Resolved, That the California Medical Association's Council, through such committee as it may determine, explore all possibilities for improving the present situation, and that it consult with the State Bar and other interested groups and report its findings to this House of Delegates.

(Reference Committee No. 3 noted in its report: Here in the problem of medical expert testimony, we are confronted with a problem which affects all of us and one which deserves further study and consideration.)

* * *

RESOLUTION No. 31

Introduced by: Robert Smalley.
Representing: Mendocino-Lake County.

Subject: "Grass Roots" Education Against Socialized Medicine.

WHEREAS, The members of the California Medical Association and the American Medical Association are frequently asked to send telegrams to congressmen to influence impending legislation against socialized medicine; and

WHEREAS, In spite of this, there is a continued drift both toward socialism and socialized medicine; and

WHEREAS, Well informed medical men are unanimously agreed that socialized medicine and socialism are detrimental to the health and welfare of the country; and

WHEREAS, The best progress in combating this evil was made when a firm of press agents were retained by the American Medical Association and conducted a countrywide "grass roots" educational campaign against socialism and socialized medicine; and

WHEREAS, Similar progress has not been made since their services were discontinued; now, therefore, be it

Resolved, That the California Medical Association reaffirm its support of a "grass roots" educational campaign; and be it further

Resolved, That the California delegates to the American Medical Association introduce a similar resolution in the House of Delegates of the American Medical Association.

(Reference Committee No. 3 recommended against adoption of the resolution as not being needed, but the House of Delegates approved an amendment and voted the amended resolution as it appears above.)

RESOLUTION No. 32

Introduced by: Edgar F. Mauer.
Representing: Los Angeles County.

Subject: Armed Forces Medical Library.

WHEREAS, The Armed Forces Medical Library contains the world's greatest collection of medical literature; and

WHEREAS, Its present housing is inadequate and dangerous and prevents proper use of this material; and

WHEREAS, A bill has been introduced in the Congress to establish a National Library of Medicine with adequate quarters; now, therefore, be it

Resolved, That the California Medical Association support the establishment of a National Library of Medicine in a new and adequate building and that all California senators and congressmen be requested to support this proposal.

(Reference Committee No. 3 noted in its report: This resolution indicates our support of a worthy project, namely, a National Library of Medicine.)

* * *

RESOLUTION No. 33

Introduced by: Dave F. Dozier.
Representing: Sacramento County Medical Society.

Subject: Trustees of C.P.S.

WHEREAS, The President of the California Physicians' Service in his year of activity acquires and has in his possession much official and unofficial knowledge relative to the welfare of California Physicians' Service, its beneficiaries and physician members; and

WHEREAS, Present by-laws, on occasion, terminate his position not only as President but also as member of the California Physicians' Service Board of Trustees, thereby occasioning serious loss of this knowledge to C.P.S. and its Board; now, therefore, be it

Resolved, That Chapter VII of the by-laws of California Physicians' Service be amended by adding a new section, No. 1(b), to said Chapter VII, to read as follows:

"Sec. 1(b). In addition to the trustees elected or appointed as otherwise in these by-laws provided, the immediate past-president shall serve as a trustee, with all of the rights and privileges of such office, for a period of one year after the termination of his tenure as president, regardless of eligibility as to consecutive terms. The immediate past-president shall serve in addition to the authorized number of trustees specified in Chapter VI, Sec. 1 of these by-laws."

(The C.P.S. Reference Committee noted in its report: By way of explanation, the present by-laws of

California Physicians' Service authorize the trustees to make any change in the by-laws that may seem necessary, with the one exception that amendments relating to a change in the number of trustees must be approved by this House of Delegates. The by-laws of C.P.S. further provide that this House of Delegates may amend at any regular annual session, such amendment to become effective immediately. Therefore, if the foregoing amendment is adopted, it will be effective immediately.)

* * *

RESOLUTION No. 34

Introduced by: Ernest F. Elmore.

Representing: Santa Clara County.

Subject: Automobile Safety Devices.

WHEREAS, It is the aim of Doctors of Medicine to prevent as well as to treat injury and disease; and

WHEREAS, Many medical man hours, much suffering and cost are involved in repairing the human damages resulting from automobile accidents; and

WHEREAS, Studies and experiences have indicated that deaths and injuries resulting from motor car accidents can be reduced markedly by safety devices designed to protect the occupants of motor cars; and

WHEREAS, Some of the protective and safety devices are readily available and can be installed with a minimum of cost and inconvenience, while other changes to effect greater safety and to reduce deaths and injuries can be made only in the design and manufacture of automobiles; therefore, be it

Resolved, That the California Medical Association urges every owner of an automobile to install available safety devices in his car; and be it further

Resolved, That the California Medical Association urges each automobile manufacturer to expand research concerning safety and to produce automobiles equipped with additional safety features and devices; and be it further

Resolved, That the California Medical Association urges the California Senate and Assembly to study this problem of automobile safety with one of the objects being to require certain minimum standards of equipment; and be it further

Resolved, That copies of this resolution be forwarded to (1) the appropriate legislative committee of our State Senate and Assembly, (2) the Director of Public Relations of each of the automobile manufacturers, and (3) to the C.M.A. delegates to the A.M.A. for action in the House of Delegates of the A.M.A.

(Reference Committee No. 3 noted in its report: Your committee is heartily in accord with the intent of this resolution urging the use of automobile safety devices.)

RESOLUTIONS REFERRED TO COUNCIL

The following resolutions were, by action of the 1956 House of Delegates, referred to the Council of the California Medical Association for further study, action or report, as indicated in each item.

RESOLUTION No. 6

Introduced by: Jay J. Crane.

Representing: Los Angeles County.

Subject: Private Practice of Medicine in Tax-Supported Facilities.

WHEREAS, The House of Delegates of the California Medical Association on May 3, 1955, adopted a resolution reaffirming the unalterable opposition of the California Medical Association to corporate and tax-subsidized medical practice; and

WHEREAS, The resolution also opposed a tax-supported medical school engaging in the practice of medicine and the levying of fees and collection thereof for professional services; and

WHEREAS, Full time members of the medical faculties of tax-supported medical schools are engaged in the private practice of medicine for their own account using facilities supported and supplied by tax-supported medical schools; and

WHEREAS, This private practice of medicine is conflicting with the principles of private enterprise and inimical to the rights of the private practitioner of medicine; and

WHEREAS, The House of Delegates by resolution should evolve rules and regulations governing the private practice of full-time medical faculty members of tax-supported medical schools; now, therefore, be it

Resolved, That the California Medical Association, acting through its House of Delegates, proclaim and issue the following rules:

1. Full-time members of the medical faculty of a governmental or tax-supported medical school may engage in private practice only in private offices and private hospitals and not in offices or hospitals supported or maintained by tax money.

2. That if the medical requirements of a private patient are such that the necessary equipment for proper treatment is available only within a governmentally or tax-supported facility or hospital, then and in that event, such equipment may be available for the treatment of a private patient, but only on the same basis and privileges that any indigent patient receives and without any charge being made for professional services. If similar equipment becomes available in a private medical facility or hospital, then the private patient must be treated or referred to the private medical facility or hospital.

3. Private practice by full-time members of a medical faculty of a governmentally or tax-supported medical school contrary to the foregoing rules shall be considered unethical practice.

(Reference Committee No. 3 noted in its report, as amended on the floor of the House: "This resolution states (1) that full-time members of medical faculties of government or tax-supported medical schools may engage in private practice only in private offices and private hospitals and not in offices or hospitals supported or maintained by tax money and (2) private practice by full-time members of a medical faculty of a governmentally or tax-supported medical school contrary to the foregoing rules shall be considered unethical practice. Your committee recognizes the importance of the problems set forth by this resolution. We believe, however, that the magnitude of the problem is such that it requires further and prolonged study and should be referred to the Council, the Council to refer to a committee the question of the private practice of medicine by physicians whose facilities are provided for them by institutions, this committee to report yearly to the Council.")

* * *

RESOLUTION No. 23

Introduced by: Robert Lee Dennis.

Representing: Santa Clara County.

Subject: Narcotic Drug Addiction.

WHEREAS, The illicit use of narcotic drugs has increased alarmingly in the United States during the past fifteen years; and

WHEREAS, To the newly addicted persons an ever increasing percentage of teen-age children are being added; and

WHEREAS, The illegal traffic in drugs flourishes because of the staggering rewards which it offers to the unscrupulous; and

WHEREAS, The present attempted method of control is a punitive and prohibitive one, failing to recognize that while the unaddicted purveyor of illegal narcotics is a criminal of contemptible character, drug addiction itself is overwhelmingly a problem of sickness and not one of crime; and

WHEREAS, The punitive approach alone to the control of narcotics addiction drives the addicts under cover and forces them to a situation of desperation in which they are often obliged to push the drug, infecting others, and to engage in criminal acts, ranging from prostitution to shoplifting, and from armed robbery to murder in order that they may obtain a supply of drugs; and

WHEREAS, It is believed that the problem could be better solved by a combined punitive and therapeutic approach the first arm of which would be the offering of narcotics of good quality by legally and medically controlled clinics to all existing proven narcotic addicts, thus forcing ruin upon the illicit traffic at its economic source, bringing the narcotic addict to the surface where he could be counted, registered, evaluated and treated, and changing drug addiction from a criminal offense to a remediable illness and the second arm of which would be the strengthening of our laws against and punishments of the unaddicted dealers and peddlers of illegal drugs; and

WHEREAS, These steps combined with a thoroughgoing program of education should result in an ever-diminishing number both of new addictions and of crimes committed by addicts; and

WHEREAS, It is believed that the medical profession has never before offered its organized assistance to the correction of drug addiction; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association offers to the legally constituted governmental bodies responsible for the control of narcotics the full assistance of the California Medical Association in correcting the misuse of narcotic drugs; and be it further

Resolved, That the House of Delegates of the California Medical Association approves and hereby directs the Council and appropriate committees of the California Medical Association under the Council to press for: (1) The establishment of clinics wherever needed in California in which narcotics of good quality will be offered at cost to all proven existing narcotic addicts under a system of legal and medical control to be determined by study; (2) fundamental changes in our laws which will increase the punishments administered to persons found guilty of selling, transferring or handling narcotic drugs illegally to the extent that the traffic will be extremely hazardous and unattractive, and (3) an intensive program of public education whereby the effects and dangers of narcotic drugs will be made known; and be it further

Resolved, That the House of Delegates of the California Medical Association hereby directs its delegates to the House of Delegates of the American Medical Association to present and press for adoption of an appropriately worded similar resolution in the House of Delegates of the American Medical Association at its next regular session.

(Reference Committee No. 3 noted in its report: Your committee wishes to recognize not only the importance of the subject of this resolution but also the excellence of the author's presentation . . . Your committee recommends that this resolution be referred to the Council.)

* * *

RESOLUTION No. 24

Introduced by: James H. Thompson.

Representing: San Francisco County.

Subject: Definition of Specialist.

WHEREAS, Specialists are recognized by both the public and the medical profession; and

WHEREAS, It is essential that some definition of a specialist be established; and

WHEREAS, The definition will be made by insurance companies or other lay organizations if the medical profession does not take steps to make such a qualification; now, therefore, be it

Resolved, That the Council of C.M.A. request the Medical Services Commission to study and make recommendations as to the standards for qualification of specialists in the various specialty fields.

(Reference Committee No. 3 noted in its report: While recognizing the problem which has stimulated the introduction of this resolution, which deals with the definition of a specialist, your committee feels that a request for an existing Commission to study and make recommendations in a matter which cannot be settled on a basis of a single state, is an oversimplification. We therefore recommend that this resolution be referred to the Council of the C.M.A.)

* * *

RESOLUTION No. 35

Introduced by: Frank Robinson.

Representing: San Diego County.

Subject: Private Practice of Medicine in Medical Institutions.

WHEREAS, The House of Delegates of the California Medical Association on May 3, 1955, adopted a resolution reaffirming the unalterable opposition of the California Medical Association to corporate and tax-subsidized medical practice; and

WHEREAS, The resolution also opposed a tax-supported medical institution engaging in the practice of medicine and the levying of fees and collection thereof for professional services; and

WHEREAS, Full-time members of the medical faculties of tax-supported medical institutions are engaged in the private practice of medicine for their own account using facilities supported and supplied by tax-supported or corporate medical institutions; and

WHEREAS, This private practice of medicine is conflicting with the principles of private enterprise and inimical to the rights of the private practitioners of medicine; and

WHEREAS, The House of Delegates by resolution should evolve definite policies with respect to the private practice of medicine by members of the profession practicing in tax-supported institutions; now, therefore, be it

Resolved, That the California Medical Association, acting through its House of Delegates, proclaim and issue the following policies:

1. Members of the Medical faculty of a tax-supported or corporate institution may engage in private practice only in private offices and private hospitals and not in offices or hospitals supported or maintained by tax or corporate monies.

2. That if the medical requirements of a private patient are such that the necessary equipment for proper treatment is available only within a governmentally or tax-supported facility or hospital, then and in that event, such equipment may be available for the treatment of a private patient. If similar equipment becomes available in a private medical facility or hospital, then the private patient must be treated or referred to the private medical facility or hospital.

3. Private practice by members of a medical faculty of a tax-supported or corporate institution contrary to the foregoing policies shall be considered unethical practice.

(Reference Committee No. 3 noted in its report: Your committee finds that this resolution concerning the private practice of medicine in medical institutions is identical in intent with that of the resolution No. 6 introduced by Jay J. Crane of Los Angeles County under the subject of "Private Practice of Medicine In Tax-Supported Facilities." Therefore, your committee recommends referral to the Council for consideration along with resolution No. 6.)

* * *

RESOLUTION No. 36

Introduced by: Arthur A. Marlow.

Representing: San Diego County.

Subject: All Medications Prescribed Should be Labelled with the Names of Their Contents.

WHEREAS, The number and brands of medications have been increasing at a tremendous rate; and

WHEREAS, Increasing travel has resulted in vast numbers of persons carrying unlabelled medications which cannot be identified readily; and

WHEREAS, Undesirable and sometimes dangerous side effects of medications are frequent and require immediate identification of such medication; and

WHEREAS, A physician, without knowledge of the nature of a previously prescribed medication, may prescribe additional and, therefore, excessive dosage of a medication; now, therefore, be it

Resolved, That the California Medical Association instruct its delegates to the American Medical Association to introduce a resolution at the next meeting of the House of Delegates recommending that all medications prescribed be labelled with the names of their contents.

(Reference Committee No. 3 noted in its report: Your committee recognizes the need stated in this resolution which has as its subject the labelling of medications prescribed with the names of their contents. We have heard considerable testimony on this resolution and, after careful consideration, we believe that

action on this matter should be postponed. We therefore recommend that this resolution be referred to the Council for study and action by an appropriate committee.)

RESOLUTIONS NOT ADOPTED

The following resolutions were introduced but not adopted by the House of Delegates. Comments by the reference committee appended to each resolution give the reasons for the recommendation of negative action.

RESOLUTION No. 13

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: C.M.A. Public Relations.

WHEREAS, Public relations efforts are of great importance to each county society as well as to the California Medical Association; and

WHEREAS, Each county has different public relations problems and programs to meet these needs; and

WHEREAS, Many county societies have developed effective public information programs; and

WHEREAS, The bulk of monies available are spent at the state level; now, therefore, be it

Resolved, That the C.M.A. take immediate and effective action to develop a long-range public relations program based upon integration, and subsidy when desired and indicated, of public relations programs of individual county societies, emphasizing more realistic programs on doctor-patient relationships.

(Reference Committee No. 3 noted in its report: Your committee is aware of the local problems of county societies and their branches with respect to public relations but upon due consideration it is our opinion that the Public Relations Department of the C.M.A. is fulfilling the intent of this resolution. We further believe that it would be poor policy and financially unfeasible to allocate C.M.A. monies to local groups. We therefore recommend that this resolution *do not pass.*)

* * *

RESOLUTION No. 25

Introduced by: George Houck.
Representing: Santa Clara County.
Subject: Insurance Forms.

WHEREAS, A steadily increasing proportion of the professional contacts of physicians and surgeons with their patients is involved with insurance carriers, and the cost of processing the forms of the insurance carriers has become both a major problem and a significant expense in the offices of all physicians and surgeons; and

WHEREAS, The expense of this work is properly a cost of the business of the insurance carrier and should not be passed on to the physician or, indirectly, to the other patients of the physician who are not covered by insurance; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association instruct the officers of the California Medical Association to discuss the problem with representatives of insurance carriers, requesting that a reasonable fee be paid for the completion of claim forms that insurance companies find necessary for the conduct of their own business.

(Reference Committee No. 3 noted in its report: Your committee is aware of the annoyance caused by endless insurance forms. We do not feel, however, that the insured should be penalized through a charge to the carriers. We would like to call attention to the almost universal adoption of the standard form which can be obtained from the C.M.A. This form facilitates and simplifies the handling of insurance claims. We further urge that the C.M.A. continue its efforts toward universal adoption of its standard form. Your committee recommends that this resolution *do not pass.*)

* * *

RESOLUTION No. 30

Introduced by: William H. Thompson.
Representing: San Mateo County.
Subject: Retirement Benefits for Physicians.

WHEREAS, Present Federal legislation does not allow self-employed physicians retirement planning benefits as are available to most citizens under a compulsory or voluntary plan; and

WHEREAS, The majority of California physicians desire such benefits; and

WHEREAS, It is not known whether a majority of physicians desire retirement planning benefits in the form of tax deductible retirement income insurance premiums; Social Security inclusion; or some other plan or combination of plans; and

WHEREAS, We have not been adequately informed on the advantages and disadvantages of these various plans; now, therefore, be it

Resolved, That the C.M.A. through its component County Medical Societies shall arrange and subsidize the dissemination of adequate unbiased information by pamphlet and speakers to interested County Medical Societies; and be it further

Resolved, That each County Medical Society shall study this information and any other information they wish and shall then poll their members as to the type of retirement planning benefits desired; and be it further

Resolved, That the results of these County Society polls shall be compiled by the C.M.A. and that the C.M.A. Delegates to the A.M.A. House of Delegates

be instructed to present a resolution to the 1957 Session indicating the desires of the majority of C.M.A. members and resolving that the A.M.A. request Federal legislation to that end.

(Reference Committee No. 3 noted in its report: It is the opinion of your committee that the intent of this resolution, which deals with retirement benefits for physicians, is admirable. The timing of the proposed survey is, however, questioned. Our representatives have for some time been, with due authorization of our elected delegates, actively supporting the Reed-Keogh bill. It would seem inadvisable that the proposed survey be carried out while action on this bill is still pending. If the Reed-Keogh bill or similar legislation should not pass, this resolution might be resubmitted.)

CONSTITUTIONAL AMENDMENT ADOPTED

The following amendment to the Constitution of the California Medical Association was introduced in the 1955 House of Delegates and, in accordance with present requirements of the Constitution, was placed on the table for one year. At the meeting of the House of Delegates held April 29, 1956, it was unanimously adopted.

WHEREAS, A new corporation has been established called PHYSICIANS' BENEVOLENCE FUND, INC., to administer the duties under Section 6 of Article IV of the Constitution of the California Medical Association; now, therefore, be it

Resolved, That Section 6 of Article IV of the Constitution which now reads:

"At least $1.00 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund and shall only be used for the purposes as set forth in the By-Laws."

is hereby amended to read as follows:

"At least $1.00 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund, Inc., a corporation, and shall be used for the purposes as set forth in that corporation's Articles and By-Laws."

BY-LAW AMENDMENT ADOPTED

The following amendment to the By-Laws of the California Medical Association was introduced in the form of a resolution, which was rephrased by Reference Committee No. 4 into an exact amendment to the By-Laws of the Association and unanimously adopted. The complete report of the Reference Committee, together with the original resolution, is shown here.

RESOLUTION No. 10

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Section on Internal Medicine.

WHEREAS, The Constitution of the California Medical Association states that the Scientific Assembly shall be divided into sections, each section representing that branch of medicine described in its title; and,

WHEREAS, It is desirable that the title of the scientific section should describe that branch of medicine represented by that section; and,

WHEREAS, The term "General Medicine" may be expected to include such specialties as allergy, syphilology and dermatology, and other branches of medicine, all of which have their own scientific sections in the California Medical Association and conduct their deliberations and presentations outside the scientific section of "General Medicine"; and

WHEREAS, The section on "General Medicine" now concerns itself with those subjects which are identified throughout the state and nation in scientific groups as "Internal Medicine"; therefore, be it

Resolved, That the California Medical Association House of Delegates discontinue the scientific section on "General Medicine" and create a scientific section to be titled, "Scientific Section on Internal Medicine."

Your Reference Committee has modified the "*Resolved*" of the above resolution to conform to the By-Laws of the California Medical Association as follows:

Resolved, That Chapter IV, Section 1 (a) of the By-Laws which now reads

"Section 1.—Division of Scientific Work

"(a) Scientific Sections. The scientific work of the Association shall be divided into seventeen scientific sections, as follows: General Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology; Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Pathology and Bacteriology; Dermatology and Syphilology; Neuropsychiatry; General Practice; Public Health; Allergy; Eye; and Orthopedics."

is hereby amended to read as follows:

Section 1.—Division of Scientific Work

"(a) Scientific Sections. The scientific work of the Association shall be divided into seventeen scientific sections, as follows: Internal Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology; Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Path-

ology and Bacteriology; Dermatology and Syphilology; Neuropsychiatry; General Practice; Public Health; Allergy; Eye; and Orthopedics.

Your Reference Committee recommends that this resolution, as rephrased and modified, *do pass.*

ELECTION OF OFFICERS

At the May 2, 1956, meeting of the House of Delegates the following officers were elected. Terms of office are indicated where they extend for more than one year.

President-Elect.....Frank A. MacDonald, Sacramento
Speaker.....James C. Doyle, Beverly Hills
Vice-Speaker.....J. Norman O'Neill, Los Angeles

Councilors—for terms ending 1959:

Second District.....Omer W. Wheeler, Riverside
Fifth District.....Robert O. Pearman, San Luis Obispo
Eighth District.....Samuel R. Sherman, San Francisco
Eleventh District.....Ralph C. Teall, Sacramento
At-Large.....Arthur A. Kirchner, Los Angeles
T. Eric Reynolds, Oakland

Councilor—for unexpired term ending 1957:

Sixth District.....Donald C. Harrington, Stockton

Delegates and Alternates to American Medical Association —for two-year terms starting January 1, 1957:

Delegates	*Alternates*
Leopold H. Frazer	Hartzell H. Ray
E. Vincent Askey	Donald A. Charnock
Dwight L. Wilbur	James E. Feldmayer
Donald Cass	J. Norman O'Neill
J. Lafe Ludwig	H. Milton Van Dyke
R. Stanley Kneeshaw	Burt Davis
*C. J. Attwood	Arlo A. Morrison
	†J. E. Vaughan

Trustees to California Physicians' Service:

Bert L. Halter	Robb Smith
Merlin L. Newkirk	Mr. Robert A. Hornby
Leon O. Desimone	

*One-year term ending December 31, 1956.
†Unexpired term ending December 31, 1957; alternate to Frank A. MacDonald.

Executive Committee Minutes

Tentative Draft: Minutes of the 260th Meeting of the Executive Committee, San Francisco, July 24, 1956.

The meeting was called to order by Chairman Heron in the Yosemite Room of the Sir Francis Drake Hotel, San Francisco, on Sunday, June 24, 1956, at 9:30 a.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Auditing Committee Chairman Heron and Secretary Daniels.

A quorum present and acting.

Present by invitation during all or part of the meeting were Doctors Arthur A. Kirchner and T. Eric Reynolds. Messrs. Hellgren of Lumberman's Mutual Casualty Co., Charles O. Finley and Calvin Smith of Charles O. Finley Co., Administrators of the C.M.A. disability insurance program, Glenn W. Gillette and Robert L. Thomas of the C.M.A. staff.

Absent for cause were Council Chairman Lum and Editor Wilbur.

1. *Membership:*

(a) On motion duly made and seconded, 119 delinquent members whose dues have been received since May 26, 1956, were voted reinstatement.

(b) On motion duly made and seconded in each instance, Doctors George W. Koch of Orange County and Alfred J. Cooper of San Diego County were voted Retired Membership.

(c) On motion duly made and seconded in each instance, 14 applicants were voted Associate Membership. These were: Anita E. Faverman, Alameda-Contra Costa County; Mary Hayes, Jack Schiff, Fresno County; Lester S. McLean, Humboldt County; Donald L. Hutchinson, Peter VanArsdale Lee, Faye G. Sheeley, Los Angeles County; Jack Levitt, Napa County; Eugene E. Bossi, Henry W. Turkel, H. E. Vandervoort, Albert E. Warrens, San Francisco County; L. H. Stahn, Stanislaus County; Joan R. Hart, Placer-Nevada-Sierra County.

(d) On motion duly made and seconded in each instance, 7 applicants were voted reductions of dues because of prolonged illness or postgraduate study.

2. *Committee on Health and Accident Insurance:*

(a) *Disability Insurance:* Discussion was held on proposals submitted by Lumberman's Mutual Casualty Co. in order to correct the serious losses being incurred through the disability insurance coverage available to association members.

On motion duly made and seconded, it was voted to accept a 3-year plan with a step-up premium according to age, paying a maximum monthly indemnity of $400 with benefits beginning on the first day of injury or eighth day of illness.

(b) *Group Life Insurance:* Discussion was held on a proposal that group life insurance be made available to all California Medical Association physicians. The fee for retaining an insurance consultant to obtain bids and specifications would be approximately $1,500-$2,000.

On motion duly made and seconded, it was voted to refer this matter to the Council.

(c) *Catastrophic Hospital Plan:* Doctor Kirchner explained the $300 deductible catastrophic hospital expense plan being offered to some county medical societies.

The committee recommends that a decision to

enter into such a program be left up to the respective county medical societies.

3. *Commission on Medical Services:*

(a) *New Member:* Discussion was held on the appointment of a new member to replace Doctor Ralph Teall, resigned.

(b) *Committee on Indigent Care:* On motion duly made and seconded, it was voted to accept the resignation of Dr. Hollis L. Carey as Chairman, and to appoint Dr. C. L. Cooley of San Francisco in his stead. Doctor Carey will remain on the committee.

On motion duly made and seconded, it was voted to authorize the Committee on Indigent Care to enter into a study with Stanford Medical School on the costs of providing medical care to the indigent in Butte County. The necessary funds to be allocated from the Commission budget if Foundation financing is not available.

(c) *Insurance Pamphlet:* The Commission recommended use of the C.M.A. mailing list by the Health Insurance Council for a mailing to all members of a pamphlet titled "Some Fundamentals of Health Insurance."

On motion duly made and seconded, it was voted to approve the mailing of this pamphlet.

(d) *Committee on Fees:* The Commission recommended that a subcommittee of the Committee on Fees be created to deal exclusively with the Industrial Accident Fee Schedule. On motion duly made and seconded, it was voted to create such a subcommittee with the following appointments: Doctors James H. Thompson of San Francisco, George D. Maner and Packard Thurber, Jr. of Los Angeles, and Francis J. Cox, San Francisco, Chairman.

4. *Committee on Mental Health:*

Discussion was held regarding the appointment of a new member to replace Dr. H. L. Gartshore, resigned. On motion duly made and seconded, it was voted to appoint Dr. Knox Finley to fill the unexpired term.

5. *House of Delegates—Transactions:*

On motion duly made and seconded it was voted to approve the publication of the proceedings of the House of Delegates in summary form in CALIFORNIA MEDICINE.

6. *1958 and 1959 Annual Sessions:*

Discussion was held on the short lapse of time between the 1958 meetings of the C.M.A. and the A.M.A. in San Francisco. On motion duly made and seconded, it was voted to hold the 1958 C.M.A. meeting in Los Angeles and the 1959 meeting in San Francisco.

7. *Woman's Auxiliary:*

On motion duly made and seconded, it was voted to recommend to the Auxiliary that all matters be referred to the Auxiliary Advisory Board before coming to the Executive Committee or the Council.

8. *Advisory Committee to the State Alcoholic Rehabilitation Commission:*

A request from the State Alcoholic Rehabilitation Commission for C.M.A. representatives on its Advisory Committee was received.

On motion duly made and seconded, it was voted to appoint Doctors Hollis L. Carey of Gridley and Cullen Ward Irish of Los Angeles as the C.M.A. representatives to the Advisory Committee.

9. *Council Meetings:*

On motion duly made and seconded, it was voted to hold the next meeting of the Council in Los Angeles on Saturday, July 28, 1956.

On motion duly made and seconded, the matter of holding Council meetings in other parts of the state was referred to the Council.

10. *Health Fair:*

Doctor Charnock read a letter from the Los Angeles *Examiner* in which the paper offered to pay the expenses of a jointly sponsored Health Fair in Los Angeles in the fall of 1957.

On motion duly made and seconded, it was voted to refer this item to the Council.

Adjournment:

There being no further business to come before the committee, the meeting was adjourned at 12:15 p.m.

IVAN C. HERON, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

AYERS, THOMAS FRED. Died in San Francisco, June 21, 1956, aged 69. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1920. Licensed in California in 1920. Doctor Ayers was a member of the San Francisco Medical Society.

✤

BAK, EDWARD W. Died September 17, 1955, aged 81. Graduate of Rush Medical College, Chicago, Illinois, 1898. Licensed in California in 1927. Doctor Bak was a member of the Los Angeles County Medical Association.

✤

BARBER, EDNA MAY. Died in Alameda, June 20, 1956, aged 74, of melanotic carcinoma. Graduate of the Oakland College of Medicine and Surgery, 1914. Licensed in California in 1914. Doctor Barber was a retired member of the Alameda-Contra Costa Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

BUDAEFF, IVAN T. Died in Daly City, June 12, 1956, aged 60, of cancer of the lung. Graduate of the University of Oregon Medical School, Portland, 1930. Licensed in California in 1936. Doctor Budaeff was a member of the San Mateo County Medical Association.

✤

CRANE, CARL CUSTER. Died in San Francisco July 1, 1956, aged 80. Graduate of Harvard Medical School, Boston, Massachusetts, 1899. Licensed in California in 1909. Doctor Crane was a member of the San Francisco Medical Society.

✤

CUSHMAN, JOSEPH BRILLING. Died in San Jose, January 17, 1956, aged 49, of myocardial infarction and arteriosclerotic disease. Graduate of Rush Medical School, Chicago, Illinois, 1934. Licensed in California in 1949. Doctor Cushman was an associate member of the Alameda-Contra Costa Medical Association.

✤

DESMOND, MICHAEL A. Died January 9, 1956, aged 74. Graduate of the University of Illinois College of Medicine, Chicago, 1903. Licensed in California in 1925. Doctor Desmond was a member of the Los Angeles County Medical Association.

✤

HAWLEY, DARRELL BERTRAND. Died May 4, 1956, aged 65. Graduate of the University of California, Berkeley-San Francisco, 1934. Licensed in California in 1934. Doctor Hawley was a member of the Los Angeles County Medical Association.

HUBBARD, CLINTON D. Died in Manhattan Beach, June 28, 1956, aged 90. Graduate of the University of Michigan Medical School, Ann Arbor, 1891. Licensed in California in 1908. Doctor Hubbard was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

HUSTEAD, EDWIN L. Died in Los Angeles, June 11, 1956, aged 70, of heart disease. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1912. Licensed in California in 1921. Doctor Hustead was a member of the Los Angeles County Medical Association.

✤

LEWIS, CYRIL E. Died in Auburn, July 9, 1956, aged 79. Graduate of Jefferson Medical College of Philadelphia, Pennsylvania, 1904. Licensed in California in 1905. Doctor Lewis was a retired member of the Placer-Nevada-Sierra County Medical Society, the California Medical Association, and an associate member of the American Medical Association.

✤

LOVE, ANDREW A. Died June 12, 1956, aged 58. Graduate of the University of Minnesota Medical School, Minneapolis, 1930. Licensed in California in 1930. Doctor Love was a member of the Los Angeles County Medical Association.

✤

REYNOLDS, RALPH A. Died in San Francisco, June 25, 1956, aged 64. Graduate of the University of California, Berkeley-San Francisco, 1925. Licensed in California in 1925. Doctor Reynolds was a member of the San Francisco Medical Society.

✤

SMITH, NINA R. Died in Pasadena, June 1, 1956, aged 88. Graduate of Sioux City College of Medicine, Iowa, 1900. Licensed in California in 1924. Doctor Smith was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

WEITZNER, HERBERT. Died in Oakland, June 19, 1956, aged 44, of coronary thrombosis. Graduate of Rush Medical College, Chicago, Illinois, 1938. Licensed in California in 1946. Doctor Weitzner was a member of the Alameda-Contra Costa Medical Association.

Annual Meeting

Ambassador Hotel

LOS ANGELES

April 28 - May 1, 1957

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted *to the appropriate section secretary* (see list on this page) no later than November 19, 1956.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than December 1, 1956. (No exhibit shown in 1956, and no individual who had an exhibit at the 1956 session, will be eligible until 1958.)

SCIENTIFIC PAPERS

SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT

AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY . . . . . **William J. Kerr, Jr.**
711 D Street, San Rafael

ANESTHESIOLOGY . . . . . **Howard S. Downs**
332 North Glendale Avenue, Glendale 6

DERMATOLOGY AND SYPHILOLOGY . . **Edwin M. Hamlin**
2932 North Fresno Street, Fresno

EAR, NOSE AND THROAT . . . . **Seymour Brockman**
2007 Wilshire Boulevard, Los Angeles 57

EYE . . . . . **Harold B. Alexander**
14 West Valerio Street, Santa Barbara

GENERAL PRACTICE . . . . **Thomas N. Elmendorf**
Masonic Building, Willows

GENERAL SURGERY . . . . . **W. Kenneth Jennings**
233 West Pueblo Street, Santa Barbara

INDUSTRIAL MEDICINE AND SURGERY . . **Earle T. Dewey**
600 Stockton Street, San Francisco 20

INTERNAL MEDICINE . . . . . **Donald W. Petit**
960 East Green Street, Pasadena 1

OBSTETRICS AND GYNECOLOGY . . **Keith P. Russell**
511 South Bonnie Brae, Los Angeles 57

ORTHOPEDICS . . . . . **Raymond M. Wallerius**
2909 J Street, Sacramento 16

PATHOLOGY AND BACTERIOLOGY . **Dominic A. DeSanto**
Mercy Hospital, San Diego 3

PEDIATRICS . . . . . **Sidney Rosin**
6230 Wilshire Boulevard, Los Angeles 48

PSYCHIATRY AND NEUROLOGY . . . **Howard A. Black**
2901 Capitol Avenue, Sacramento 16

PUBLIC HEALTH . . . . . **James C. Malcolm**
15000 Foothill Boulevard, San Leandro

RADIOLOGY . . . . . **Stanford B. Rossiter**
1111 University Drive, Menlo Park

UROLOGY . . . . . **Edmund Crowley**
1930 Wilshire Boulevard, Los Angeles 57

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Dear Doctor

Is your wife a member of the Woman's Auxiliary to your County Medical Society? If the answer is "yes," both you and she will be interested in the facts we shall bring out in these paragraphs. If the answer is "no," we are hopeful that you will read with interest the material we are presenting.

The annual convention of the Woman's Auxiliary to the American Medical Association was held in Chicago June 11th to 15th, at the same time as the A.M.A. convention. Those of us who were representing the California Auxiliary were pleased to hear that once again our Auxiliary was the largest in the 48 states, as we have been for the past several years. I say we were pleased, but at the same time we realize that when certain statistics are made known we are not as large as it would appear at first glance. The important thing to consider is how nearly we are reaching our potential. The potential, state-wide, is around 14,000 and yet our state membership in the Auxiliary is just under 7,000. Many of our smaller County Auxiliaries very nearly reach their potential, for here seems to exist a close relationship between the County Medical Society and the Auxiliary. Here it is that the physicians seem best to know the capabilities of the women and to appreciate their accomplishments in behalf of medicine.

It is in our large metropolitan counties that the memberships of the two organizations are in need of being drawn more closely together. For example, the potential in Los Angeles County (excepting the associate members) is around 6,000 and yet the largest number the Auxiliary has ever recorded is 1,700. There are several reasons for this. The hospitals have their own auxiliaries to which many of the physicians' wives belong and which consume all the free time these women have to give. The county is heavily organized and the wives are representative women who participate in civic, school and religious activities in their separate communities. However, there still remains a large area not covered, which includes many wives of physicians who know little or nothing of the Auxiliary, its purposes or its achievements. The Membership Chairman contacts each newly accepted member of the Los Angeles County Medical Association and through him invites his wife to membership in the Auxiliary. Perhaps this invitation never gets home to the wife, or perhaps the physician is too busy to talk it over with her and recommend that she join. In some cases it is a matter of complete indifference because nothing of the activities of the Auxiliary has come to the attention of the physician.

At the convention in June the Woman's Auxiliary to the A.M.A. gave the American Medical Educational Foundation a check in excess of $100,000 from the Auxiliary. This was the result of the activity of the Auxiliary all over the United States in behalf of private medical schools. Los Angeles County Auxiliary received an Award of Merit for its very substantial contribution in the County classification.

During the round-table discussion on Legislation the speaker for the A.M.A. stressed how impressive had been the results of the Auxiliary campaign for wires and letters sent to the legislators in opposition to HR Bill No. 7225 relative to Social Security. Each chairman of legislation at the state and county level had a part in this program.

It was heartening to hear the reports of the National Nurse Recruitment Committees. Thousands of Future Nurses' Clubs are in action all over the country in junior and senior high schools. They will bring in many girls to the nursing field and thus help to cut down the shortage of nurses which now exists all over the medical world.

In California the Woman's Auxiliary is very active in behalf of Physicians' Benevolence. This, we feel, is a service to our own, an effort to make life a little easier for physicians who have met with misfortune and who must look to others for help.

We feel sure that when your wife has a chance to review the many areas of endeavor of the Auxiliary and the outstanding accomplishments in these areas she will wish to become a part of the organization. Even if her family demands are too great for her to give much of her time she will be greatly rewarded for whatever time she is able to spare. She will enjoy being enlisted in so great a cause.

Doctor, if you are one whose wife is not yet a member of her County Auxiliary, won't you help us to bring her into membership with us? If your County Medical Society is one of the few which does not yet have an Auxiliary, we hope you will give serious thought to having one organized this year. We need your help in order to give our maximum service to your community needs.

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Guest speakers for Merritt Hospital's **eleventh annual medical seminar** to be held August 23 and 24 in Oakland, will be Dr. James J. Waring, president of the Colorado Foundation for Research in Tuberculosis, and Dr. Joel W. Baker, department of general surgery, Virginia Mason Clinic, Seattle. Included on the program of the invitational scientific meeting will be a panel discussion on surgical problems in elderly patients.

The guest speakers will also address a joint meeting of the seminar with the Alameda-Contra Costa Medical Association at 8:15 p.m., Thursday, August 23, at Hunter Hall, 1025 Second Avenue, Oakland. Dr. Waring's subject will be "Specific Plans for Control of Tuberculosis" and Dr. Baker will discuss "The Acute Surgical Abdomen: Unexpected Problems Encountered at Laparotomy."

LOS ANGELES

The professional education and symposium committee of the Los Angeles County Heart Association will conduct its **26th annual professional symposium on heart disease** on October 10 and 11 at the Wilshire-Ebell Theatre, with sessions from 9:30 a.m. to 12 noon, and 1:45 p.m. to 5:30 p.m. each day. An evening panel session will be from 8 to 10 p.m. on October 10 at a location to be announced later.

Atherosclerosis and arteriosclerosis will be discussed on the evening panel by Drs. David Barr of New York, Meyer Friedman of San Francisco, John Gofman of Berkeley, Ancel Keys of Minneapolis, William Likoff of Philadelphia and Jeremiah Stamler of Chicago.

Dr. Likoff will lead the discussion and open forum on surgery of acquired cardiovascular disease, and Dr. Bernard Lown of Boston and Dr. M. Friedman of San Francisco will present papers on digitalis therapy in management of therapeutic problems.

NAPA

Dr. Sterling S. Cook was appointed health officer of Napa County on June 18 succeeding Dr. Edward R. Pinckney.

SAN DIEGO

The tenth annual **postgraduate assembly,** sponsored by the San Diego County General Hospital, will be held September 19 and 20 at the County Hospital. Further information may be obtained from Dr. Michael J. Feeney, 3415 Sixth Avenue, San Diego 3.

GENERAL

The American Urological Association has announced the opening of competition for its annual award of $1,000 (first prize of $500, second prize $300 and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than ten years and to hospital interns and residents doing research work in urology.

Full particulars may be obtained from the executive secretary of the association, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1956.

* * *

The first **International Cancer Cytology Congress,** sponsored jointly by the International Union Against Cancer, the College of American Pathologists, the American Society of Clinical Pathologists and the Inter-Society Cytology Council, will be held at the Drake Hotel, Chicago, October 9-11, 1956. Further information may be obtained from Dr. Arthur H. Dearing, College of American Pathologists, Prudential Plaza, Suite 2115, Chicago 1.

* * *

The American Academy of Obstetrics and Gynecology has been renamed the American College of Obstetricians and Gynecologists, Dr. Ralph E. Campbell, president of the college, announced. The new name became official on May 11. The organization was first incorporated in August, 1951. It now has 3,831 fellows, the announcement said, and expects to induct some 500 new fellows at its 1956 meeting which will be held at the Palmer House, Chicago, November 7 to 9.

* * *

At the two-day annual convention held at the Ambassador Hotel in Los Angeles on April 28 and 29, the **Medical Assistants of Northern California** and the **Medical Assistants of Southern California** formally merged and will henceforth be known as California Medical Assistants Association. The following officers were elected: President, Socorro Munoz, Kern County; president-elect, Lilli Woods, San Francisco; first vice-president, Claire Booth, Los Angeles County; second vice-president, Anne Reece, Tulare County; corresponding secretary, Clara Lehmberg, Kern County; recording secretary, Grace Todd, Los Angeles County; treasurer, Leona Thompson, San Diego County.

* * *

Formation of the **International Research Council,** a world-wide organization for the dissemination of knowledge concerning aphasia associated with hemiplegia, was announced recently by Hamilton Cameron, M.D., general director of the Council. The aims of the council include the establishment of a clearing house on the subject, and the publication of a monthly *Review-Bulletin.*

Dr. Cameron, a hemiplegic aphasic since 1943, devised a "Hand Talking Chart" for vocally paralyzed persons (CALIFORNIA MEDICINE, August, 1953, page 120).

Copies of the chart and information on the International Research Council may be obtained from Dr. Cameron at 601 West 110th Street, New York.

* * *

Dee DuBridge, president of the California Institute of Technology, will serve as chairman of a special committee appointed by the **Ford Foundation** to recommend a plan for distribution of a previously announced appropriation of $90,000,000 to the nation's privately supported medical schools for use "in the strengthening of their instruction." Carlyle Jacobsen, executive dean for medical education, State University of New York, will be executive vice-chairman.

Other members of the committee are: Dr. George Packer Berry, dean, Harvard University Medical School, Boston; Detlev W. Bronk, president, The Rockefeller Institute; Leonard Carmichael, secretary, Smithsonian Institution; Dr. Ward Darley, president, University of Colorado, Boulder; Dr. John Holmes Dingle, professor, School of Medicine, Western Reserve University, Cleveland; Leon

Falk, Jr., chairman of the board of Maurice and Laura Falk Foundation and director of National Steel Corporation, Pittsburgh; A. Crawford Greene, attorney, San Francisco; Robert March Hanes, president, Wachovia Bank and Trust Company, Winston-Salem, N. C.; Mrs. Albert D. Lasker, president, Albert and Mary Lasker Foundation, New York; Dr. Robert Frederich Loeb, professor of medicine, Columbia University, New York; William Farnsworth Loomis, director, the Loomis Laboratory, Greenwich, Conn.; Dr. Franklin David Murphy, chancellor, University of Kansas; and Robert Winship Woodruff, chairman of the finance committee of the Coca-Cola Company, Atlanta.

* * *

The American Goiter Association has announced that it is again offering the **Van Meter Prize Award** of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held in the Hotel Statler, New York, N. Y., May 28, 29, and 30, 1957, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations, should not exceed 3,000 words in length and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the Secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, N. Y., not later than January 15, 1957.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Anesthesia Seminar. August 27 to 29. Eighteen hours. Fee: $50.00.

Treatment of Emotional Problems in Office Practice. Thursdays, September 13 through December 6. Twenty-four hours. Fee: $50.00.

Fundamental Principles of Radioactivity Including Clinical Use of Radioisotopes. Wednesdays, September 19, 1956 through July 3, 1957. One hundred eighty hours. Fee: $700.00.

Photography in Medical Practice and Research. Thursdays, September 20 through December 13. Twenty-four hours. Fee: $35.00.

Surgical Anatomy. September 24 to November 26. Fee: $75.00.

Dermatology in General Practice. Wednesdays, October 17 through November 21. Twelve hours.*

Aviation Medicine. October 24, 25, 26. Twenty-three hours.*

Third Annual X-ray Technicians Symposium. November 10 and 11.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Postgraduate Seminar in Pharmacy. September 27 to 29. Fifteen hours. Fee: $25.00.

Ophthalmological Conference on Glaucoma. September 27, 28, 29. Fifteen hours. Fee: $60.00.

Symposium on Trauma, Franklin Hospital, September 29 and 30. Twelve hours. Fee: $40.00.

Medicine for General Practitioners. East Oakland Hospital, Tuesday Evenings, September 10 to December 3. Twenty-four hours. Fee: $50.00.

Psychological Aspects of Medical Practice. Wednesday Evenings, October 3 to December 12. Twenty hours.*

Recent Advances in Laboratory and Clinical Medicine for Medical Technicians. Tuesday Evenings, October 16 to November 13. Nine hours.*

Symposium on Cardiovascular Disease. November 14. Nine hours. Fee: $12.50.

Annual Ophthalmology Conference. December 5, 6, 7. Twenty hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

The Physics of Diagnostic and Therapeutic Radiology. Fridays, September 7 through February 1, 1957. Designed for physicians preparing for the specialty of radiology. Twenty hours. Fee: $50.00.

Intensive Review of Internal Medicine. Especially designed for physicians planning to take their written examination for American Boards in Internal Medicine. Monday through Friday, 8:30 a.m. to 12:30 p.m. September 24 to October 5. Forty hours. Fee: $65.00.

Home Course in Electrocardiography. Begins October 12. Fifty-two weeks. Fee: $100.00.

Bedside Clinics and Panel Discussions on Therapy in Internal Medicine. Los Angeles County Hospital, Thursdays, October 18 through January 24, 1957, 7:30 to 9:30 p.m. Twenty-four hours. Fee: $65.00.

Pediatrics Clinics for the General Practitioner. Twenty weeks, October 9 through February 12, 1957, 8:30 to 9:30 a.m., Children's Hospital, Santa Anita Foundation Research Building Auditorium. Fee: $40.00.

*Fees to be announced.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Anesthesiology. Daily, full-time, six months, beginning each six months. Fee: $300.

Surgical Anatomy, Dissection, Demonstration and Lectures. Monday and Wednesday, October 1, 1956 to June 5, 1957. 264 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures on Upper and Lower Extremities. Monday and Wednesday, October 1, 1956 to January 9, 1957. 104 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures. Wednesdays, October 3, 1956 to June 5, 1957. Seventy-four hours.

Surgical Anatomy, Demonstration and Lectures of Upper and Lower Extremities. Wednesdays, October 3, 1956 to January 9, 1957. Twenty-six hours.

General Urology. Mondays, October 1, 1956 to December 17, 1956. Twenty-four hours.

General and Surgical Pathology. Tuesday and Thursday, October 2, 1956 to June 4, 1957. 194 hours.

Traumatic and Minor Orthopedic Surgery. Tuesday and Thursday, October 2, 1956 to January 10, 1957. Thirty seven and one-half hours.

Roentgen Diagnosis and Therapy. Wednesday, October 3, 1956 to June 5, 1957. Thirty-three hours.

Surgical Physiology. Thursday, October 4, 1956 to June 6, 1957. Sixty-four hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSE

SACRAMENTO VALLEY CIRCUIT, in cooperation with Stanford University School of Medicine:

Dunsmuir—Monday, October 21, 28, November 4, 11.

Chico—Tuesdays, October 22, 29, November 5, 12.

Marysville—Wednesday, October 23, 30, November 6, 13.

Auburn—Thursdays, October 24, 31, November 7, 14.

WEST COAST CIRCUIT in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

Contact: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill St., Los Angeles 13.

Medical Dates Bulletin

AUGUST MEETINGS

NEVADA STATE MEDICAL ASSOCIATION annual meeting in conjunction with Reno Surgical Society, Riverside Hotel, Reno, Nevada, August 22 to 25. *Contact:* Lowell Peterson, M.D., chairman, Arrangements and Program Committee, 130 North Virginia St., Reno, Nevada.

SEPTEMBER MEETINGS

COLORADO STATE MEDICAL SOCIETY Annual Session, Estes Park, Colorado, September 5 to 8. *Contact:* Charley J. Smyth, M.D., chairman, Scientific Program Committee, 835 Republic Bldg., Denver 2, Colorado.

UTAH STATE MEDICAL ASSOCIATION Annual Scientific Meeting, Hotel Utah, Salt Lake City, September 6 to 8. *Contact:* Mr. Harold Bowman, executive secretary, 42 S. Fifth Street E., Salt Lake City 2, Utah.

ST. JOHN'S HOSPITAL Postgraduate Assembly, September 10, 11, 12, 9 a.m. to 4 p.m. and 8 to 9 p.m. *Contact:* John C. Eagan, M.D., Director, 1328 22nd Street, Santa Monica, or phone EXbrook 4-0281.

STOCKTON POSTGRADUATE STUDY CLUB, Thursday evenings, September 13 to November 15, Stockton State Hospital. *Contact:* A. Merchant, M.D., Medical-Dental Bldg., Stockton.

MONTANA MEDICAL ASSOCIATION Annual Meeting, September 13 to 15, Great Falls, Montana. *Contact:* Mr. R. Hegland, Box 1692, Billings, Montana.

SANTA BARBARA COUNTY HEART ASSOCIATION Symposium on Heart Diseases, in cooperation with University of Southern California Postgraduate Division, September 15, 9 a.m. to 5 p.m., Santa Maria Inn, Santa Maria. *Contact:* Katherine McCloskey, executive director, 18 La Arcada Court, Santa Barbara.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, September 16-19. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

SAN DIEGO COUNTY GENERAL HOSPITAL TENTH ANNUAL POSTGRADUATE ASSEMBLY. September 19-20. *Contact:* Howard B. Kirtland, Sr., M.D., Chairman Postgraduate Committee, 3505 Fourth Avenue, San Diego 3.

THE AMERICAN ROENTGEN RAY SOCIETY, Statler Hotel, Los Angeles, September 25 to 28. *Contact:* Wilbur Bailey, M.D., chairman, Local Committee, 2009 Wilshire Blvd., Los Angeles.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE ANNUAL MEETING. September 29, La Playa Hotel, Carmel. *Contact:* Mrs. Mildred B. Coleman, Assistant Secretary, Room 515, 350 Post Street, San Francisco 8.

OCTOBER MEETINGS

SAN FRANCISCO HEART ASSOCIATION Annual Postgraduate Symposium, October 3, 4, 5, 1956, St. Francis Hotel, San Francisco. *Contact:* Executive director, 604 Mission St., San Francisco.

AMERICAN CANCER SOCIETY, California Division, Annual Cancer Conference, October 4, 2 to 5 p.m., Fairmont Hotel, San Francisco. *Contact:* Otto Pflueger, M.D., Conference chairman, 384 Post St., San Francisco.

HERRICK MEMORIAL HOSPITAL Medical Staff Second Annual Postgraduate Symposium, 9 a.m.-5 p.m., October 5, Berkeley High School Little Theatre, Allston Way between Grove and Milvia, Berkeley, Calif. *Contact:* Administrator's Office, Herrick Hospital, Berkeley, or telephone: THornwall 5-0130.

AMERICAN COLLEGE OF SURGEONS Clinical Congress, San Francisco, October 8 to 12. *Contact:* American College of Surgeons Office, 40 E. Erie St., Chicago, Ill.

SAN DIEGO COUNTY HEART ASSOCIATION Professional Symposium, U. S. Naval Hospital Auditorium, Balboa Park, San Diego, October 9. *Contact:* O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth St., San Diego 1.

LOS ANGELES COUNTY HEART ASSOCIATION 26th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 West 8th St., Los Angeles, October 10 and 11. *Contact:* Robert A. Pike, executive director, Los Angeles County Heart Association, 316 South Bonnie Brae, Los Angeles 57 or telephone DUnkirk 8-4127.

CALIFORNIA MEDICAL ASSOCIATION Regional Conference on Physicians and Schools, October 12 and 13, Santa Barbara. *Contact:* R. L. Thomas, assistant executive secretary, 450 Sutter Street, San Francisco.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 8th Annual Scientific Assembly, Hotel Statler, Los Angeles, October 14, 15, 16, 17. *Contact:* William W. Rogers, executive secretary, California Academy of General Practice, 461 Market St., San Francisco.

ALAMEDA-CONTRA COSTA DIABETES ASSOCIATION one-day Symposium on Oral "Insulinoids," October 22, Highland-Alameda County Hospital, Oakland. *Contact:* Institute for Metabolic Research, Highland-Alameda County Hospital, Oakland.

ORTHOPAEDIC HOSPITAL and RANCHO LOS AMIGOS RESPIRATORY CENTER jointly sponsor "A Seminar in Comprehensive Patient Care for Selected Neuromuscular Disabilities," October 22 to 26. All-day sessions beginning at 9:00 a.m. and one evening session, October 24. *Contact:* C. L. Lowman, M.D., Orthopaedic Hospital, 2400 S. Flower St., Los Angeles, or John Affeldt, M.D., Rancho Los Amigos, Hondo, Calif.

NOVEMBER MEETINGS

LOS ANGELES UROLOGICAL ASSOCIATION Postgraduate Assembly, Ambassador Hotel, Los Angeles, November 12 to 16. *Contact:* Miss Vesta Fitzsimmons, executive secretary, 6253 Hollywood Blvd., Los Angeles 28.

VETERANS ADMINISTRATION HOSPITAL Conference on Pulmonary Diseases, each Thursday. *Contact:* William R. Haas, M.D., director, Professional Services, Veterans Administration Hospital, Oakland, Calif.

SONOMA COUNTY HEART ASSOCIATION Cardiovascular Symposium presented in cooperation with University of California Medical Extension, and Stanford University School of Medicine, Odd Fellows Hall, Santa Rosa, November 14. *Contact:* Thomas M. Torgerson, M.D., president, Sonoma County Heart Association, P. O. Box 844, Santa Rosa, Calif.

1957 MEETINGS

CALIFORNIA RURAL HEALTH COUNCIL Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. *Contact:* Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

INFORMATION

"Medical Abuses" of the VA Outpatient Program

On April 8, 1956, the Associated Press wires carried a story charging that there were "hundreds of abuses of the veterans' medical program by doctors and veterans." The *New York Times* headlined the story "MEDICAL ABUSES CHARGED IN V.A."; the *Chicago Tribune* headlined it "FIND DOCTORS, VETS ABUSE VA MEDICAL PLAN." Since the report on which these charges are based totals 275 pages of small type, the Committee on Federal Medical Services (A.M.A.) feels that a detailed analysis should be provided to the medical profession, as a footnote to the newspaper stories.

"MEDICAL" ABUSES

The following question-and-answer survey of the report may help to clarify the situation.

Q. On what basis are the charges made?

A. Individual reports from 46 VA hospitals and regional offices in 34 states and the District of Columbia.

Q. What were these facilities asked to report?

A. *Actually established* cases where the VA was billed for services not rendered or for complete services when only partial services were rendered and cases in which there have been "allegations or suspicion" of abuses as above.

Q. Is there any over-all tabulation listing the total cases reported, the number concerned with outpatient medical care as distinguished from dental care, the number "actually established" as distinguished from those "alleged or suspected" *and* those for which insufficient evidence was found?

A. No. The report merely reproduces the answers from the VA facilities. To make any such tabulation, each report must be read individually.

Q. Do the reports tabulate which cases are proven and which are merely alleged?

A. No. To so classify the cases reported, each individual case report must be read in its entirety.

Q. How many medical cases are reported?

A. 81 *medical* cases; 553 *dental* cases.

Q. Does this mean 553 dentists and 81 physicians are accused?

A. No, because the method of reporting is not uniform. Some facilities reported the number of authorizations for care suspected, some reported on cases, some reported concerning professional personnel alleged to be overcharging.

Q. Did every facility report some abuses?

A. No. Six said they had no dental care abuses to report; nineteen said they had no medical care abuses to report.

Q. What period was covered in the report?

A. The House Committee on Veterans' Affairs, which requested the survey, asked for all cases arising during the period from January 1, 1953, to March 31, 1955, a period of 27 months. Some cases reported dated back as far as 1947; the reporting facility *discovered* the fee discrepancies only after January 1, 1953, and therefore considered the cases as "arising" within the given period.

Q. How many outpatient services were rendered during this period?

A. VA reports are by fiscal years, rather than calendar years. During fiscal year 1953 (June 30, 1952 to June 30, 1953), fee-basis physicians treated 637,047 VA patients and fee-basis dentists provided 160,796 examinations and 198,664 treatments; during fiscal year 1954, physicians treated 585,057 VA patients and dentists provided 123,170 examinations and 245,634 treatments. These two fiscal years cover a period which overlaps 18 months of the survey period; these figures probably represent an understatement of the total service provided during the survey period.

Q. How does this compare with the "abuses" reported?

A. During the survey period, physicians provided over 1.2 million treatments, with 81 overcharges or suspected overcharges; dentists provided over 726 thousand examinations and treatments, with 553 overcharges reported.

Q. Did the reporting facilities state any opinions concerning these "abuses"?

A. Reporting facilities felt that the great majority of cases were honest mistakes. Discrepancies were almost all felt to be due to clerical mistakes in physicians' and dentists' office records or to misunderstanding of VA regulations. Particularly in regard to dental cases, VA officials frequently pointed out that the dentist concerned had varied the treatment given the patient *for the patient's* good, without realizing that any change in the treatment authorized by the VA would require a supplementary authorization. The "abuse," in other

Reprinted from the Federal Medical Service Newsletter of the Council on Medical Services, A.M.A.

words, was ignoring some red tape. In almost all cases, the dentist or physician refunded any amount not authorized by the VA, without protest.

Q. What are some of the individual comments from the VA offices?

A. The Chicago office pointed out that there were only 59 "abuses" during a period when over 25,000 dental treatments had been provided; the Louisville office noted that it had found only $284 in overcharges for dental care while $526,000 had been expended in uncontested dental fees. In New York City, it was noted that one of the two physicians who had made an overcharge (due to error in physician's records) was known to provide more treatments to veteran patients than he billed the VA for. In Syracuse, New York, it was noted that complaints were made against only two physicians, out of 2,000 participating in the program.

Q. What comment does the House Committee on Veterans' Affairs make?

A. In the "Foreword" to the report, House Committee Print No. 232, Rep. Teague, chairman of the committee says: "Certainly these abuses do not provide the basis for the generalization that there is substantial dishonesty among the medical profession. They do show, however, that in any large program, involving many thousands of individuals, a certain amount of carelessness, misunderstanding and, in a few cases, outright dishonesty, will creep in."

NON-SERVICE CONNECTED ABUSES?

The General Accounting Office of the Federal Government started an investigation (reported in HCP 232) in March, 1955. It took the last 100 GM&S cases admitted to 11 different VA hospitals —excluding those with service-connected disabilities and those with NP or TB ailments—leaving a pure random sample of 1,100 GM&S NSC cases.

As its basis, it used the City Worker's Family Budget of the Labor Department, which estimates $3,812 to $4,454 for a four-person family and 46 per cent less ($2,058 to $2,405) for a single person. To be generous, the GAO used $3,500 for its dividing line.

Of the 1,100 veterans, the annual income was found for 935—and 217 had an annual income from $3,500 to $12,000; 56 had incomes over $5,000. Of 950 for whom net worth was obtained, 176 had a net worth of $5,000 or more, including 79 who had net worths of $10,000 or more.

After hospitalization, the veterans were asked whether they could have paid for the care; only 612 (a little over half) answered, but 17 said they could have paid. The other 488 didn't say.

THE PHYSICIAN'S *Bookshelf*

SKIN SURGERY—Ervin Epstein, M.D., Assistant Clinical Professor of Medicine (dermatology), Stanford University Medical School. Lea & Febiger, Philadelphia, 1956. 228 pages, 242 illustrations on 101 figures, $7.50.

This book is a valuable and timely one, for "Skin Surgery" interests not only the dermatologist but all physicians who are called upon to surgically remove any of the defects of the skin.

Cold steel surgery, electrosurgery, cryosurgery, chemosurgery, abrasive surgery and other approaches are ably dealt with by various authorities in these special fields.

Most of the procedures described can be done in the physician's office. However, the chapters dealing with skin grafting and oral plastic surgery describe procedures which generally are best done in the hospital by those who have special skill in plastic surgery or oral surgery.

In the reviewer's opinion one of the most valuable chapters is that on the chemosurgery of the cutaneous malignancies. This method offers a method of removal which microscopically follows the extensions of every such cancer until it has been completely eradicated. We know of no other method which can as accurately tell when the entire growth has been removed.

The author is to be congratulated upon the development of this work which, as far as our knowledge goes, is the only one in its field.

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THE HEMORRHAGIC DISORDERS—A Clinical and Therapeutic Approach—Mario Stefanini, M.D., Associate Professor of Medicine, Tufts University School of Medicine; and William Dameshek, M.D., Professor of Medicine, Tufts University School of Medicine. Grune & Stratton, New York, 1955. 368 pages, $11.75.

This is probably the best book available on the hemorrhagic disorders. The wide experience of the authors in the laboratory and at the bedside are combined in a very readable volume. Before discussing the normal hemostatic process, a list of all the blood coagulation factors is presented together with the terms used in the book; this is very helpful in overcoming the confusion the coagulationists have brought upon themselves with each having a different name for the same factor. All hemorrhagic disorders are considered, with sections even on the bleeding tendency of obstetric accidents and dysproteinemia. In addition to descriptive text, there are many supplementary diagrams, charts and tables. The illustrations, both black and white and color, are good and numerous. In the appendix is an outline of screening tests to work out a bleeding problem, together with a description of methods. An interesting innovation is an addendum which brings each chapter up to publication time with a summary of very recent work. A bibliography of more than 750 articles is included. This book is a must for the hematologist, research worker, internist, clinical pathologist and any clinician faced with a bleeding problem.

DOCTORS' OFFICES & CLINICS—Medical and Dental—Paul Hayden Kirk and Eugene D. Sternberg. Reinhold Publishing Corporation 430 Park Avenue, New York 22, N. Y., 1955. 218 pages, $12.75.

This is really an excellent book in an important field. There is a good section on the historical aspects of doctors' offices and some fairly penetrating philosophical observations, both of which are a pleasant surprise in an essentially technical work.

The pictures are fine, the plans clearly reproduced. The cost analysis will be most useful to those who are contemplating building. If there is a lack, it is in the field of the larger clinics. Though to be sure these organizations usually have their own architects and planners and stand less in need of the kind of advice furnished in this volume.

The whole book points up what everyone knows; viz., that doctors are highly individualistic and each individual requires special treatment. There can be with most doctors no prefabricated plan which he can use. There is still need for the architect on the scene cooperating with the doctor. But even with this in mind, any doctor or groups contemplating building should get this book. It will save him many times the purchase price.

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FUNCTIONAL OTOLOGY—The Practice of Audiology—Morris F. Heller, M.D., Assistant Attending Otolaryngologist for Audiology Clinic, Chief of the Audiology Clinic, The Mount Sinai Hospital, New York, Springer Publishing Company, Inc., 44 E. 23rd St., New York 10, N. Y., 1955. 225 pages, $5.50.

This interesting little book is better than most books on audiology in one respect. Most of them are written in a confusing, highly technical terminology, so that one has to be a physicist or electronics engineer to understand. *Functional Otology* discusses such things as the testing of hearing by pure tones and by speech, hearing aids, speech ("lip") reading, voice and speech production, and similar subjects of audiology in a brief, clear, and accurate manner. While too elementary for the advanced audiologist, it would be of great help to the resident in otolaryngology wishing a basic survey of the subject, and to those physicians whose work touches on the deaf and hard of hearing and their problems.

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YEAR BOOK OF DRUG THERAPY—1955-1956 Series—Harry Beckman, M.D., Director, Department of Pharmacology, Marquette University Schools of Medicine and Dentistry. The Year Book Publishers, Inc., 200 East Illinois St., Chicago, 1956. 560 pages, $6.00.

The Year Books of Drug Therapy are well done summaries of significant therapeutic literature which attempt to point a proper moral. The possessor has at his desk a review of significant therapy for the preceding year. As the volumes pile up they become an indicator of therapeutic progress.

This year's volume devotes the bulk of attention to cardiovascular diseases (and particularly to anticoagulant drugs), rheumatic disorders, chest diseases and neuropsychiatry.

THERAPY OF FUNGUS DISEASES—An International Symposium. Edited by Thomas H. Sternberg, M.D., Professor of Medicine (Dermatology) and Assistant Dean for Postgraduate Education, and Victor D. Newcomer, M.D., Associate Professor of Medicine (Dermatology), both from the Division of Dermatology Department of Medicine, School of Medicine and Medical Extension, University Extension, University of California at Los Angeles. Little, Brown and Company, Boston-Toronto, 1955, 332 pages with illustrations and diagrams.

Therapy of Fungus Diseases represents a collection of 54 papers presented before the International Symposium on Fungus Disease held at the University of California at Los Angeles in June, 1955. Over 200 leading scientists participated in this program which was concerned largely with the current experimental work in the field of mycology. Of the 54 papers presented, 41 deal with ecologic problems, the status of fungus disease in various countries throughout the world, and in vitro or in vivo laboratory experiments on potential antifungal agents. The remaining 13 papers present statistical reports on therapy of mycotic infection in man, including in some instances dosage and duration of treatment. Of the latter group, those articles concerned with the use of Nystatin in treatment of Candida albicans infections give the most practical information for use by the average physician in daily practice. This book is of value mainly to those persons desiring a knowledge of the recent investigative work being carried on in the field of medical mycology.

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EXPERIMENTAL TUBERCULOSIS—Bacillus and Host With an Addendum on Leprosy—Ciba Foundation Symposium—G. E. W. Wolstenholme O.B.E., M.A., M.B., B.Ch. and Margaret P. Cameron, M.A., A.B.L.S., Editors. Little, Brown and Company, Boston, 1955. 396 pages, 69 illustrations, $9.00.

More than two score outstanding investigators of the nature of the tubercle bacillus and the reaction of the tissues of experimental animals to it discussed their findings at a symposium in London in October 1954. The constitution and characteristics of newly isolated components of the tubercle bacillus were elucidated with the use of electrophoretic and chromatographic separation and chemical, serological and immunological tests. The response of surviving and of growing cells in vitro, as well as of the tissues of intact animals, to the presence of living or dead tubercle bacilli or their constituents, and the effect of various factors on such response, and their relationship to the development of hypersensitivity and to continued multiplication of tubercle bacilli were explored by various workers. Although only a restricted number of the active aspects of the tubercle bacillus and the disease which it produces could be included in these papers, they digest a vast amount of technical data on fundamental problems which should stimulate further investigations in this field. This is not a complete survey of past discoveries in experimental tuberculosis, but rather a series of sallies along its borderlines which significantly extend our knowledge of it. Physicians interested in scientific advances, as well as those especially concerned with the ravages of tuberculosis, may profit from perusing its pages.

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DISEASES OF THE CHEST—H. Corwin Hinshaw, M.D., Ph.D., Clinical Professor of Medicine, Stanford University School of Medicine; L. Henry Garland, M.B., B.Ch., Clinical Professor of Radiology, Stanford University School of Medicine; W. B. Saunders Company, Philadelphia, 1956. 727 pages, $15.00.

This volume is presented as a textbook for medical students and practitioners. Progress in our knowledge of diseases of the chest has been so rapid that there is urgent need for an up-to-date presentation, particularly in the departments of clinical medicine and radiology. This volume, written by two outstanding leaders in their respective fields, meets the need admirably. The format is excellent. The material is well arranged and compiled with extreme simplicity and conciseness. The arrangement of chapter indices, and the headings and subheadings, make for quick reference to an unusual degree. The opinions expressed by the authors are obviously based on wide experience and sound judgment. If at times they seem somewhat didactic, it is evidently because a full discussion would be quite impossible within the bounds of a single volume.

The roentgenographic illustrations are profuse, the findings unusually clear and relevant. The lateral views do much to clarify the location and extent of the lesions and to establish their value in any roentgenographic study of the chest. Unfortunately, to this reader at least, they are very confusing. The attempt of a few years ago to view films of the chest so that they would be as seen from the position of the x-ray tube has fortunately been discarded, in so far as the PA views are concerned (in deference to the pressure of "public" opinion?), in favor of the position as they would appear on the fluoroscopic screen, or as the clinician sees the patients in the flesh. It is unfortunate that the lateral views should still be presented in juxtaposition to the PA views, not as they would appear under the fluoroscope but rather from the position of the x-ray tube.

Possibly a more detailed discussion of the question of treatment of converters would be desired by some.

Considerable space is given to the technique of pneumothorax and pneumoperitoneum, and in our opinion it is justified. It is quite probable that the next few years will see the pendulum swing back from the present position of extreme neglect to these once indispensable procedures. There is still a place for them, perhaps less glamorous than formerly, but of equal importance to the individual patient.

The emphasis on the recognition of activity of a tuberculous lesion by the radiologist is especially timely, and one would wish the writers had gone even further. In view of the many disastrous results from failure to recognize evidences of activity on the film, we are still hoping for a definite directive that the presence of a tuberculous cavity means that the lesion is active and immediate further study by the clinician is called for.

It would appear that the 1950 classification of the National Trudeau Society has been followed rather than that of 1955. The use of the term "arrested" may still be justified on the grounds of practicability, for its omission from the recent classification leaves an awkward gap.

In summary, the book is a must for all who would be abreast of the times in the field of diseases of the chest.

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BASIC SURGICAL SKILLS—A Manual with Appropriate Exercises—Robert Tauber, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania, W. B. Saunders Company, Philadelphia, 1955. 75 pages, illustrated, $3.75.

This is a very small 75-page book, essentially full of illustrations of methods of tying knots, cutting sutures and putting in surgical stitches. It is a very simply done, but adequate, book illustrating the most fundamental aspects of surgery.

I think that people who are interested in surgery would readily learn all that is in this little book the first two weeks of work in an operating room but it might be helpful to peruse its pages during the first few weeks that one is in the surgical amphitheatre. It is a manual with appropriate exercises and I am sure if one followed the exercises they could learn rapidly the fundamentals of knot tying and suture cutting in surgical procedures.

EXCITABILITY OF THE HEART—Chandler McC. Brooks, Ph.D., Brian F. Hoffman, M.D., E. E. Suckling, M.Sc., M.E.E., Dept. of Physiology and Pharmacology, State University of New York, College of Medicine at New York City and Oscar Orias, M.D., Instituto de Investigacion Medica Mercedes y Martin Ferreyra, Cordoba, Argentina. Grune & Stratton, New York, 1955, 373 pages, $6.50.

This monograph on excitability of the heart is a major contribution to the field. The authors include a great deal of unpublished work in which they have thoroughly re-examined the entire problem of excitability, refractory period, velocity of conduction, and action currents in the myocardium, utilizing newer methods that they themselves have helped develop.

There are innumerable illustrations and an excellent bibliography. The book will prove of interest to physicians, pharmacologists, and physiologists interested in the cardiac arrhythmias. The authors logically develop the subject of excitability, transmembrane potentials, the production and nature of fibrillation, cardiac reactions to heat and cold, the importance of chemical mediators and the effects of ions. Antifibrillatory agents are thoroughly discussed and the results are all summarized in a concluding chapter.

The reviewer agrees with Dr. Wiggers, who wrote the foreword, that the monograph will be considered a classic by physiologists and should appeal to all progressive physicians and surgeons.

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FIBROCYSTIC DISEASE OF THE PANCREAS—Report of the Eighteenth Ross-Pediatric Research Conference. Issued by Ross Laboratories (formerly M & R Laboratories), Columbus 16, Ohio. 92 pages.

Pediatrics is heavily in debt to the Ross (formerly the M & R) Laboratories of Columbus, Ohio, for supporting without any strings or advertising) a long series of first-class symposia on major topics of which the present is the eighteenth. In all of these a carefully selected group of leading authorities, mainly American, have participated as chairmen, speakers or discussants, and the printed volume has brought to the medical public concise but thorough reports on current thought and research, together with searching, expert discussion. In the present volume there were, in addition to the two chairmen, 12 speakers and 18 discussants. Related embryology is presented by Warkany, and exocrine function in fetal life by Villee (whose conclusions were questioned in discussion). Associated cirrhosis of the liver is discussed in the next chapter by Sant' Agnese. Currently great interest is attached to the abnormalities of sweat in fibrocystic disease, both as a means of diagnosis and as a cause of certain serious complications, due to excessive losses of sodium and chloride during hot weather. The basic physiology of sweating is reviewed by Cooke on the basis of his own researches, leading to the tentative conclusion that in fibrocystic disease there is a shortage of energy for sweat production, leading to a concentration of solids in the sweat. Sant' Agnese reports his findings on the constancy of the sweating defect in patients, its clinical effects, and the methods for its detection and measurement. Schwachman discusses at length the various enzymatic and other abnormalities in the duodenal fluid and the methods of determining them. Sections on the chemistry of mucus and the histochemistry of mucus and exocrine glands show few abnormalities to have been discovered as yet.

The role of the staphylococcus is discussed by Vernon Knight, together with the appropriate selection of antibiotics. Lowe's report on metabolic studies shows that patients with the disease go into negative nitrogen balance at a higher protein intake than do normal children. The secondary clinical effects of the extensive pulmonary changes are dealt with by Bruck and by Royce: Emphysema, respiratory acidosis, and cardiac failure from cor pulmonale. Barton Childs' final section on genetics concludes that as a rule the trait is recessive.

This is a great deal of ground to be covered in 92 pages, and it is remarkable how thoroughly it is accomplished. Anyone looking for an authoritative review of the latest work (up to October 1955) on fibrocystic disease will find the volume an excellent source.

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THE DIAGNOSIS AND MANAGEMENT OF UROLOGICAL CASES—Handbook—Bruce W. T. Pender, M.B., B.S., F.R.C.S., Senior Surgical Registrar, St. George's Hospital, London; James O. Robinson M.A. (Cantab.) M. Chir., F.R.C.S., Senior Surgical Registrar, St. Bartholomew's Hospital, London; Bailliere Tindall and Cox, London, 1955. 170 pages, $5.00.

Pender and Robinson offer a short, practical outline on diagnosis and care of urologic patients in British clinics. Suitable for the undergraduate and the general practitioner, this book gives only the details of urologic investigation and pre and postoperative management. There is no discussion of pathology or surgical technique, which the authors consider to have been covered in more advanced texts. The various investigative devices and medications used in office urology are briefly illustrated and described. Some of the drugs and quite a few of the instruments used, such as Teals gorget and the Wheelhouse staff, are names and terms rarely heard in this country.

There are chapters on disease of the prostate, bladder, upper urinary tract and a very informative one on conditions affecting the penis and scrotum. The text is illustrated with simple composite diagrams depicting the causes and locations of the common urologic disorders.

The student interested in the care of cases as practiced by British urologists will find this book of value.

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ATLAS OF GENERAL SURGERY—Joseph R. Wilder, M.D., Assistant Professor of Surgery, The New York Medical College. The C. V. Mosby Company, St. Louis, 1955. 222 pages, 101 plates, $13.50.

This is a very interesting book consisting of 222 pages and 101 plates illustrating the techniques of the common surgical procedures. It is well done. Opposite each illustration there is a summary of the appropriate surgical techniques employed, to the point, well written and well illustrated and will be a very valuable asset to the library of students, house officers and physicians doing ordinary surgical procedures. It is recommended as an atlas of surgical technique for those doing standard surgical procedures. Its discussion is limited entirely to the operative attack. Evaluation of different procedures is not given but the choice of procedures recommended is good.

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THE LACRIMAL SYSTEM—Clinical Application—Everett R. Veirs, M.D., Chief, Section of Ophthalmology, Scott and White Clinic, Temple, Texas; Professor of Ophthalmology, University of Texas, Postgraduate School of Medicine, Temple Division. Grune & Stratton, New York, 1955. 159 pages, $7.50.

This text has 155 pages subdivided into twelve chapters. The subject matter is well and understandably written.

The subject is one often neglected in the average book on ophthalmology. This book fulfills the need of the average clinician and surgeon for definitive diagnosis and care of the lacrimal system.

The physiology is clearly discussed. The pathology is clearly outlined but the best parts of the book are the good illustrations and clearly described surgical procedures.

THE TRUTH ABOUT CANCER—Charles S. Cameron, M.D., Medical and Scientific Director, American Cancer Society. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1956. 268 pages, $4.95.

Written by the Medical and Scientific Director of the American Cancer Society, this book represents a comprehensive outline of practical and useful information for the layman with clarity and facility not equaled in any other similar attempt to the knowledge of the reviewer. While the primary purpose of the book is for the relatively uninformed or in many instances, misinformed nonprofessional individual, there are some nonmedical scientists engaged in certain areas of research related to cancer who might benefit from the general orientation provided by this book. Much of the content also would be helpful to physicians who have occasion to prepare discussions on cancer for nonprofessional audiences.

There are admirable discussions of such phases as normal and abnormal growth and the spread of cancer, a realistic appraisal of heredity in cancer, explanations of common misconceptions as well as an insight into the phenomenon of quackery and a review of the field of cancer research up to the present time. The latter part of the volume presents information on cancer of specific systems and anatomical areas as well as the lymphomas and a discussion of cancer in children.

In general the author tempers the harsh facts of biologic reality with some degree of euphoria, which the reviewer considers as justifiable in the area of public education as compared to the more realistic approach to a medical or scientific audience. In the introductory chapter, however Dr. Cameron informs his readers with commendable honesty that "early diagnosis" is not synonymous with "curable cancer," and proceeds to offer a lucid explanation of unpredictable behavior of many cancers and the incurable nature of some because of their biologic characteristics. However in some areas he offers figures of potential curability for certain types of cancer which seem unjustifiable in the light of present knowledge, as for example a potential curability of carcinoma of the breast of almost 75 per cent, of the rectum to a level exceeding 70 per cent, and a potential curability with present technics, of bronchogenic cancer of 50 per cent. Whether such unrealistic figures of potential curability are justifiable for public information may be a matter of debate.

The format of the book is excellent, there are numerous schematic figures and graphs which are understandable to laymen of average intelligence, and some photographs which are well chosen and educational of the topics under discussion without being frightening even to the most fastidious cancerphobe. In particular a sequence of colored photographs is especially effective.

In summary the best comment is a repetition of the belief expressed above that this is by far the best source of information on cancer yet to be offered to the public and the volume deserves enthusiastic recommendation by the medical profession to those who want information about neoplastic disease. For interested physicians a perusal of the book in respect to technics of providing information for nonprofessional individuals is well worthwhile.

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HAND SURGERY—Surgery in World War II—Medical Department, U. S. Army—Edited by Sterling Bunnell, M.D., Office of the Surgeon General, Department of Army, Washington, D. C., 1955. Superintendent of Documents, U. S. Government Printing Office, Washington, 25, D. C. 447 pages, $3.75.

This text is basically documentary.

In the edition are nine chapters, each written by the Medical Officer in charge of Hand Surgery in the respective general hospitals designated as Centers in the United States. There is, therefore, some repetition of information, but each with a different slant from the individual contributor and this feature is valuable.

The Mediterranean and European theaters of operation are each represented by a chapter, and the experiences in a debarcation hospital, as well as the overall picture in the zone of interior, are likewise presented for completeness.

The most valuable part of the book is Chapter II, where, in 75 pages, conclusions in the care of injured hands are presented in a concise, superb manner by Sterling Bunnell, the editor and guiding light of the entire program.

The book is for all surgeons seriously interested in surgery of the hand.

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THE EXPRESSION OF THE EMOTIONS IN MAN AND ANIMALS—Charles Darwin, M.A., F.R.S. Philosophical Library, New York, 1955. 372 pages, $6.00.

This so-called "new edition" is essentially a reissue of the original text plus a few additional photographs showing various animal and human communicative patterns. The original work which appeared in 1872 stressed Darwin's notions that expressive facial functions were derived from the practical functions of the muscles. Darwin believed that some expressive movements stemmed directly from original practical movements, and also that opposite emotional reactions yielded opposite facial movements.

He reports studies in the expression of animals, infants, mentally ill persons, and the paintings as shown in various culture groups. Most of the emotional patterns such as weeping, depression, elation, reflection, hatred, surprise, etc., come in for separate chapters and the book contains much interesting material for physicians which could stimulate their evaluation of patients' feelings as demonstrated by expression. It must be stressed, however, that since Darwin's text, numerous other workers have studied these problems and the general conclusion of most psychologists is that aside from smiles, no other facial posture can be considered diagnostic of any specific emotion.

As a background book this volume has already made its place in the history of emotional psychology and certainly the publisher has contributed to a new generation in making it easily and readily available although at a stiff price for a reprint. The additional material in the preface and the extra pictures are not much of a contribution, and one wishes that a really good introduction covering recent work in this field could have been appended.

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RHEUMATOID ARTHRITIS AND PSORIASIS VULGARIS—Internal and Cutaneous Manifestations of Permanent Endoparasitism in the Homo Sapiens. Their Common Etiology, Pathogenesis, and Specific Vaccine Therapy—Tibor Benedek, M.D., Assistant Clinical Professor of Dermatology and Syphilology, Stritch School of Medicine, Loyola University. Chicago Medical Book Company, Jackson and Honore Streets, Chicago 12, Ill., 1955; 308 pages, $12.00. April 11, 1956.

The author attempts to explain the etiology of psoriasis and psoriatic arthritis on the basis of a bacterial organism called the bacillus endoparasiticus Benedek 1927. The evidence presented is not conclusive or convincing. The author, on page 32 described an "x" or unknown factor which controls the release of the "endoparasites" into the view that psoriasis is of unknown etiology. The author has presented an elaborate review of his theory as to the cause of psoriasis. There is much excessive material which diverts the attention of the reader from the main theme. The author's findings are in marked divergence from the evidences of numerous studies by many investigators. This book is not recommended for general use.